CX
S
6

REPORT OF THE INDIAN
EXCHANGE AND CURRENCY
COMMITTEE
VOL. I.

00109084

BOMBAY BRANCH

OF THE

Royal Asiatic Society.

Digitized with financial assistance from

Government of Maharashtra

on 01 February, 2020

CX-5-16

109084

staff was able to do it, but it was a microscopic staff attempting a herculean work; 1,200 people had been inoculated since the middle of July, *i.e.*, in the course of two months. Government granted 8 annas to all its servants that were inoculated, and the Municipality 4 annas to others. Some 2,000 people had gone out to the Municipal Health Camps, which are available for those whose income was less than 16 rupees a month. Some 7,000 people had made health camps for themselves in the outskirts of the town, the rich had gone to their country houses, and the remainder of the 60,000 had taken to flight. About 20 out of every 100 were removed to the plague hospital. 2½ annas daily with medicine, milk, sago and sugar were supplied by the Municipality to the poorer patients attended by the two municipal doctors.

Four native medical men were fighting against an epidemic which had reached the proportions I have stated, and that was all.

6. The Government of Bombay had evidently at last become alarmed at the published reports, and I was informed that the day before my arrival the Honourable Mr. Fulton, a Member of His Excellency the Governor's Council, had had a conference with the Chairman of the Municipality with the object of considering further measures to be carried out to check the epidemic, and on 15th September His Excellency Lord Lamington was to visit the town and make an inspection. What the measures were I am unable to say, but whatever they were they came too late. They could not remove the bitterness I heard expressed at the apparent callousness and indifference of the authorities, and which had ample justification in the fact that no help was given until two months of the epidemic had passed, and 2,500 deaths had occurred, nor could preventive measures adopted at a stage when the epidemic was half over have the same mitigating effect or value attached to earlier measures. Moreover, when it was decided that such measures should be carried out the machinery would have to be created, which would mean further delay. So that for practical purposes it may be stated that this epidemic was left to itself, and no attention had been paid to any of the recommendations made by the Royal College of Physicians.

7. In corroboration of what I have described, I would attach to this Memorandum an Article on "Plague in Poona," which I notice has appeared in the "Times of India" for 6th October, 1906; who the correspondent is I do not know, but it is valuable as supporting from an independent source the description of a crisis through which Poona has passed, and is likely to pass again unless action is taken on the lines already recommended.

(Signed) W. J. SIMPSON.

5th November, 1906.

00109084

No. 2.

Letter from the Government of India to the Secretary of State for India, No. 8 of 1907. Home Department Sanitary (Plague), dated Simla, the 2nd May, 1907.

(EXTRACT.)

WE have the honour to refer to Mr. Brodrick's revenue despatch, No. [illegible] dated the 18th August, 1905, in which he asked for our views on the suggestions contained in the memorandum on plague presented to him by the Royal College of Physicians in July of that year. We regret the delay which has occurred in the submission of our reply, but we trust that in the circumstances which we shall now set before you you will find a sufficient and satisfactory explanation of it. The memorandum of the Royal College of Physicians reached us at a critical time in the history of plague administration in this country. Measures for coping with the epidemic were then still being taken in accordance with the principles laid down by the Indian Plague Commission, but experience had shown that those principles required modification. Every expedient that the existing state of our knowledge suggested had been considered, and [illegible]

of India had accordingly undertaken an important laboratory investigation into the causation of plague and were engaged in collecting evidence regarding its epidemiology and the effects of administrative measures in checking its spread. At the moment therefore when the memorandum of the Royal College of Physicians reached us, we were prepared to welcome any practical suggestion from any source. Unfortunately, however, the memorandum contained nothing with which we were unacquainted, and, excepting details of organisation, which are little more than matters of nomenclature, it suggested only two measures which had not already been tried on a large scale. These were (i) the bacteriological examination of rats in order to *detect* plague, which we had never had occasion to introduce systematically, although it was often used in cases of doubt, and (ii) the disinfection of houses by fumigation, which had been found to be impracticable and very expensive. The memorandum contained evidence that the knowledge of the signatories with regard to plague administration in India was plainly defective, and while they completely ignored the history of our attempts to combat the disease, they appeared to assume that no organization for dealing with it existed. The signatories believed that the measures which have been found elsewhere to be useful in coping with plague would prove successful in India, and in their advocacy of a campaign on western lines they appeared to us rather to lose sight of the fact that the conditions of life in the East differ in material respects from those obtaining in advanced European countries. We could not forget the complete failure of the early efforts of the Government of India when they concentrated the whole available force of their medical services, reinforced by large numbers of troops and civilian volunteers, on the limited areas attacked by plague in 1897, nor could we ignore the evidence that in most cases those efforts had even in a wealthy city and among an educated and intelligent community not unaccustomed to European methods and ideas, been productive of harm rather than of good. In these circumstances we deferred replying to the memorandum until we had before us the replies of local Governments to the reference which had already been made to them. When those replies had been considered our resolution in the Home Department, Nos. 79–95, dated the 17th January, 1906, was published. This resolution, of which a copy was forwarded for your information with the Home Department letter to Sir Arthur Godley, No. 6, dated the 15th February, 1906, is in effect an answer to the memorandum. In the scheme of the Royal College of Physicians special prominence is given to measures of compulsion, of disinfection, and for the destruction of rats. In the resolution of the 17th January, 1906, we clearly stated that all measures depend for their success upon the hearty co-operation of the people, we indicated the limitations of disinfection, and, relying upon the improved sanitation in the towns, and the evacuation of houses in villages, we recommended the systematic destruction of rats. So far we were in agreement with the signatories of the memorandum. On the other hand, the facts ascertained in the general inquiry, and the proof of the flea-theory of the transmission of plague which was even then being obtained rendered a great part of the memorandum obsolete. On the 9th May, 1906, we consulted the local Governments on the suggestions of the Royal College of Physicians regarding organization. We enclose for your information a copy of their replies. You will see that the local authorities are practically unanimous in condemning the special organization suggested in the memorandum. The local Governments point out that suitable organizations for coping with the epidemic already exist, and that, although the executive may need strengthening in many cases, it is not desirable to strengthen it by importing physicians from England, who would necessarily be ignorant of the language and customs of the people and very ill-qualified to direct measures which may involve interference with religious usage and provoke a popular outbreak. Most of them, however, agree that the general sanitary service requires development, and that in this respect the needs of the times can be met by the employment of natives of this country. We have now before us proposals submitted by the Sanitary Commissioner for

country. His scheme is now under our consideration and we hope shortly to arrive at a practicable and satisfactory solution of the difficulties which have to be contended with. We have carefully considered the suggestions of the Royal College of Physicians in the light of the remarks made by the local Governments, and have come to the decision that in the administration of plague we must rely, at any rate for the present, upon improved sanitation in towns, and upon the co-operation of the people in the evacuation of villages, the destruction of rats and such other measures as our further investigations may suggest. The proposal to grant scholarships for the education in England of natives of India in sanitary science has received but little support from local Governments. It is clear that until we have posts to offer we need not increase the existing supply of natives of India with European qualifications, and so far as plague is concerned special training in England is superfluous.

With reference to the assertion in the memorandum that the bacteriology of plague requires a larger staff of observers, we would remark that a Plague Research Committee nominated by the Royal Society and the Lister Institute at our request have for two years past been investigating the causation of the disease, and that we have met promptly every demand which they have made for more workers in this field of research. We think that investigations can only be profitably conducted by experts working in properly equipped laboratories, and we have already submitted proposals to you for the effective strengthening of our laboratories. In these circumstances we are unable to accept the suggestions of the Royal College of Physicians for dealing with plague in India. We forward for your information, as desired by Mr. Brodrick, a copy of the instructions recently issued by local Governments explanatory of their plague policy, and we may add that we are satisfied that all that is possible in the way of affording relief to the poor is being done.

Enclosure 1 in No. 2.

Resolution of the Government of India in the Home Department. Nos. 79–95, Sanitary (Plague), dated Calcutta, the 17th January, 1906.

Read—

Home Department letter No. 1121—1135, dated the 6th July 1905, and the replies of local Governments thereto.

Review of present situation.

More than five years have now passed since the Governor-General in Council, when reviewing the report of the Indian Plague Commission, examined in the light of the knowledge then available the various measures which had been proposed or adopted with the object of checking the diffusion of the disease and indicated the considerations of policy which must govern their introduction in India. During this period, while the efforts of Government officers have in no way relaxed, and the people themselves have in many places shown a disposition to acquiesce and even to co-operate in preventive measures which do not conflict with their social and religious usages, plague has gradually spread to almost every part of India, and, subject to certain seasonal fluctuations, tends to recur year after year with undiminished virulence. About a year ago the Government of India, acting in concert with the Royal Society and the Lister Institute, made arrangements for the appointment of a scientific commission which is now investigating the causation of plague in Bombay and the Punjab. Pending the completion of these researches, which may extend over a long time and will in any case be directed mainly to the scientific aspects of the problem, the

Governor General in Council considered it desirable to place on record in a concise form the results of the practical experience which has been acquired in the last five years of actual plague administration. Local Governments were accordingly asked for reports, based as far as possible on the personal experience of their officers, on the conditions affecting the origin and spread of plague, the character of the measures to be adopted against it, the degree of success attained and the causes upon which success or failure depend. The ample materials thus collected place the Governor General in Council in a position to indicate those preventive measures which appear under present conditions most likely to be successful in the future.

Destruction of rats.

2. The most conspicuous change in the opinion of experts in India regarding plague since the issue of the Resolution of 16th July, 1900, is the greatly increased importance now ascribed to the part played by rats in spreading and keeping alive the disease. Rats are exceedingly susceptible to plague, and when once they are infected they usually communicate the infection not only to man, but also to houses which have undergone thorough disinfection. It is therefore as essential to the safety of the community to destroy infected rats as to segregate plague-stricken people. In fact almost all the evidence regarding the causation of plague may be regarded as pointing to the rat as the chief agent in its diffusion. For this reason the importance of destroying rats has been insisted on by the framers of the Paris Convention of 1903, and although European opinion is not unanimous on the point, the Governor General in Council considers that the experience recently acquired in India warrants the belief that the systematic destruction of these animals promises to be one of the most effective measures that can be adopted for preventing the spread of plague.

Street improvements; especially paving and draining.

3. Observation has also shown that plague is most severe where the houses of the people are crowded together, ill built and imperfectly ventilated, while it usually spares those areas in towns where the streets are wide, the houses well built, the alleys and side-walks paved, and the drains properly constructed. It follows that municipalities and local bodies should be encouraged and assisted to demolish insanitary quarters, to improve the paving of alleys and side-walks, to neglect no opportunities of widening narrow streets, to enforce simple building rules, and to perfect their systems of drainage and conservancy. All godowns where grain is stored should be rendered rat-proof and should be liable to periodical inspection.

Disinfection.

4. In theory the disinfection of both houses and clothing takes a high place among preventive measures and in cases of pneumonic plague it must be regarded as imperative. But the great difficulty of carrying out the process thoroughly in a house casts some doubt upon its practical utility, and the Government of India leave it to the local authorities to determine the extent to which it should be enforced with reference to the prevalent structural conditions. In any case the efficacy of house disinfection depends entirely upon the methods employed. The fluids used must be really germicidal, such as solutions of corrosive sublimate, cyllin, or izal ; they must be intelligently applied under proper supervision, and care must be taken to prevent the reinfection of the building by rats. These observations apply in their full force only to towns where the disease has not fully established itself. In villages the disinfection of houses is seldom of much use, while in towns where plague has become indigenous the difficulty of completely excluding the rats leads to constant reinfection.

Evacuation of locality.

5. Of the various measures hitherto adopted with the object of arresting an outbreak of plague none has proved so efficacious as the prompt abandonment of the affected locality for a period that varies with local conditions. In the case of villages, indeed, the evacuation of all the houses, accompanied by systematic destruction of rats, is probably the only means of effectually combating the disease. It is, however, essential that evacuation should be carried out thoroughly : if a portion of the inhabitants remain behind the disease will continue to spread. In all cases where evacuation is feasible the people should be encouraged to resort to it and

assisted by the grant of blankets and warm clothing where necessary, and by the provision of huts or the materials for building them.

Inspection of travellers.

6. The evidence which has been collected shows that the inspection of travellers by railway, road, and steamship is often successful in averting or delaying the spread of plague, but that the efficacy of this measure depends on the circumstances in which it is applied. It is of most value in protecting limited areas, such as hill stations, and places so situated that the inspection posts command all routes of access. The mere inspection of persons arriving by steamer is, however, of little use, unless the rats on board the vessel are destroyed or are prevented from reaching the shore. A segregation camp for the detention of the sick is a necessary adjunct to every inspection station, but no one need be detained who is not actually suffering from plague. In all other cases it is sufficient to record the travellers' names and addresses and to arrange for their being under surveillance for five days. Experience has shown that mere contact with a case of bubonic plague in a railway carriage involves little danger of infection.

Quarantine.

7. The example of prisons proves that quarantine may be relied upon to prevent the spread of plague by human beings, but it can seldom be applied effectually except by the people themselves, who have sometimes combined to prevent persons from infected places from entering their villages and have provided accommodation for them outside the inhabited site. In rural areas the adoption of these measures may properly be encouraged : but they do not admit of application to towns.

Segregation of the sick.

8. The removal of the sick to hospital, while it is eminently desirable in their own interests, has always been unpopular, and in cases of bubonic plague the necessity for it may be avoided, provided that the surroundings of the patient can be kept clean and free from rats. That the measure is instrumental, however, in delaying the spread of the disease is undeniable and even though segregation may be relaxed when indigenous cases become widespread, the first few cases imported into a plague-free town should, whenever possible, be segregated without delay. Cases of pneumonic plague, which is directly infectious from man to man, ought always to be segregated.

Segregation of contacts.

9. The segregation of persons who have been in contact with a patient suffering from bubonic plague is often impossible in practice. When it can be carried out with the good-will of the people the measure is no doubt useful, but where coercion has to be employed more harm than good is likely to result. In cases of pneumonic plague, however, the segregation of contacts is necessary as the risk of infection is extreme.

Inoculation.

10. Inoculation with the prophylactic fluid now manufactured at the Parel Laboratory is of value not merely for the protection which it affords against plague but also by reason of its effect in mitigating the violence of an attack. The extent to which it may be adopted depends upon the strength of the popular sentiment in its favour or against it, and the Government of India hope that the people may be encouraged to have recourse to it.

General considerations.

11. While the experience of the last five years establishes the utility of the measures enumerated above, it equally teaches that their application must depend upon the circumstances of the locality, the character of the people, the stage which the disease has reached, and the agency available for dealing with it. What is necessary in a district free from plague may be useless or vexatious where plague has become indigenous; what is effectual in one part of the country may be inoperative in another ; a degree of control which is acceptable to a particular community may be strongly resented by people who observe a different code of social usage ; and in a province with a well developed system of village officials more can be attempted than in a province where no such organization exists. Where the conditions vary so widely from province to province as is the case in India it is manifestly impossible for the Governor-General in Council to lay

down a uniform scheme of plague administration. The local Governments alone are competent to determine what measures are practicable or expedient at particular times and places, and it is upon them that the Government of India rely to make the best use of the opportunities which present themselves for checking the spread of the disease. Finally the Governor-General in Council would observe that in the last resort all preventive measures depend for their success upon the hearty co-operation of the people themselves, and that every effort should be made to enlist their sympathies and to bring home to them through their natural leaders, and in any other way that may be practicable, that it rests mainly with them to bring about by their own action the cessation of plague in India, as it has long ago disappeared from Europe. When this conviction has been firmly established in the minds of the people, the task of the district officers throughout India will be materially lightened. But that end can only be attained by carrying out thoroughly whatever measures it may be decided to introduce and by impressing upon all officers concerned in plague administration that when a decision has been arrived at there must be no hesitation in giving effect to the policy approved by the local Government.

Enclosure 2 in No. 2.

Letter from H. D. Taylor, Esq., I.C.S., Acting Secretary to the Government of Madras, Local and Municipal Department, to the Secretary to the Government of India, Home Department, No. 994-P., dated Ootacamund, the 21st September, 1906.

(Extract.)

I am directed to acknowledge the receipt of Mr. Fergusson's letter No. 871, Sanitary—Plague, dated 9th May, 1906, calling for the views of this Government on certain suggestions made by the Royal College of Physicians for dealing with plague in India. The main suggestion of the Royal College of Physicians is that a special medical and sanitary organisation should be created for dealing with plague in selected localities, that this organization should consist of officers of the Indian Medical Service and physicians brought out from England, and of a large subordinate staff (to be gradually increased in numbers and trained to greater responsibilities) of male and female native medical assistants, the whole working under the direction of a special head-quarters department, and that it should be divided into three sections—(i) an intelligence branch, (ii) a sanitary branch working at practical measures on the scene of the outbreak, and (iii) a bacteriological branch. I am directed to state that this scheme is for all practical purposes not materially different from that which is now in existence in this Presidency. The arrangements in force are briefly described in the following paragraphs.

(i) *Intelligence Branch.*—The passport system in force under which persons arriving from infected areas are observed for the incubation period of ten days, enables the local authorities to gain early intelligence of imported plague cases. At seaports passports are issued under the supervision of the Port Health Officer, at railway stations either by stationmasters or by officials specially appointed, and at other places by medical, sanitary or special officers. The official who is required to observe passport-holders is either the local medical officer, the police station-house officer, the headman of the village or any fit person appointed by the Collector of the district for the purpose; and the Tahsildar of the taluk or the Chairman of the municipality, as the case may be, is responsible for seeing that the passport-holders are duly observed. Arrangements also exist for enabling the District Medical and Sanitary Officer to check the work of the local officers and see whether all passport-holders have been duly observed. With regard to the local detection of plague, the existing scheme provides that, when any district, town, village or other area is threatened with plague by its proximity to a plague-infected area or otherwise, it is kept under observation, the area being divided into ranges

with an Inspector for each range. The Range Inspector is either a certificated sanitary inspector, a hospital assistant or one who has been specially trained for plague duty. Certificated sanitary inspectors are men who have undergone a five months' course in physiology, hygiene and bacteriological demonstrations and have passed the Intermediate Technical Examination in physiology and hygiene or equivalent examinations. Some of them are trained also in minor sanitary engineering. Persons specially trained for plague duty are ordinarily selected locally in the districts in which they are to be employed and, before employment, are given instruction in sanitation specially applicable to plague, water, ventilation, and conservancy, with practical instruction in the preparation and use of disinfectants and in methods of disinfection as applied to buildings, furniture, clothing and the person. The duties of the Range Inspector are to patrol his range constantly and systematically in order to gain the earliest possible information of any suspicious death or of the occurrence of any actual case of plague, to report immediately any such case or suspected case, to remove with the aid of the ordinary conservancy establishment defects in sanitation which would favour the propagation of plague, to check the possession of passports in the case of persons arriving from an infected locality, to ascertain whether any special sickness or mortality has occurred among rats, to examine sick or dead rats for the presence of enlarged glands, to keep a record in communication with the village headman of all persons suffering from continuous fever for more than twelve hours, and to inspect such persons. In municipalities a Divisional Inspector is appointed for every three ranges to supervise the work of the Range Inspectors A Supervisor may also be employed to check the work of the Divisional and Range Inspectors. In rural areas Supervisors are generally appointed to check the work of the Range Inspectors. The Divisional Inspectors are either certificated sanitary inspectors, hospital assistants or persons trained for plague duty. The Supervisors are frequently Europeans or Eurasians and are selected with reference to their previous training in other departments and their fitness to maintain discipline. Frontier inspection stations also exist at railway stations for the examination of persons entering an area under observation from an infected area. Passengers are allowed to proceed to their destination, passports being issued to them, but if they exhibit symptoms of plague or appear for any reason to be specially dangerous or cannot be trusted to report themselves daily for the period of observation, they may be detained at the inspection station. Similar inspection stations are established on roads leading over mountain passes or ghâts, but such stations are limited to localities in which alternative routes are not available, and where no opportunities for evading observation exist. When a case of plague or suspected plague occurs, the village headman or other local authority or the Range Inspector who detects the case reports the occurrence to the Tahsildar or Deputy Tahsildar in rural areas, to the Special Plague Officer, if the area is under special observation, or to the Chairman in a Municipality; and the Tahsildar, Deputy Tahsildar, Special Plague Officer or the Municipal Chairman, as the case may be, communicates the information to the Collector of the district who sends a telegraphic report to Government. Vigilance committees composed of influential men likely to possess an intimate knowledge of the habits of the people are also sometimes appointed in towns and villages to detect plague cases and to explain to the people the benevolent intentions of Government in their operations for the repression of plague.

(ii) *Sanitary branch working practical measures on the scene of an outbreak.*—On the occurrence of plague in any place, the size of the observation ranges, if any have been established, is reduced so as to enable the inspector to patrol his range more frequently; and if an observation staff has not been already appointed, the staff is at once organized. An ambulance staff provided with the necessary equipment is also despatched to the affected area. This ambulance staff consists of a sanitary section and a medical section, the former headed by a sanitary inspector with a corps of disinfectors and sanitary menials, the latter composed of two hospital assistants with nurses, attendants, washermen and cooks. This staff carries all requisites for the furnishing of a temporary hospital as well as the sanitary equipment for the disinfection of the infected area. The sanitary section attends to disinfection and the medical

section to the treatment and nursing of the patients. The staff and equipment are increased if the state of plague in the affected area demands it ; sepoys have sometimes been employed for the systematic disinfection of towns which have been evacuated on account of plague. The whole plague staff is controlled by "Plague Officers" and "Assistant Plague Officers," who are responsible for seeing that the sanitary measures of isolation, evacuation and disinfection are carried out. The Sanitary Commissioner as the chief adviser of Government is at the head of the plague administration in the Presidency and the district Collectors are held responsible for the operations carried out in their districts. The "Plague Officers" and "Assistant Plague Officers" include the executive authorities of the district subordinate to the Collector, together with the District Medical and Sanitary Officers and other medical officers or private physicians who may be employed for the duty.

(iii) *Bacteriological Branch.*—The necessary microscopic examinations for the detection of plague are performed as a rule by the medical officers on the spot ; and further bacteriological analyses are made at the King Institute of Preventive Medicine at Guindy to determine doubtful diagnoses. The foregoing detailed account of the methods adopted in this Presidency in the three directions indicated in clause I (*b*) of your letter under reply will, the Governor in Council believes, show that these give effect substantially to the objects which the Royal College of Physicians consider should be the aim of a properly designed system of dealing with plague. As to the establishment of an independent central authority or head-quarter department charged with the conduct of plague administration, I am to say that here a special department, constituted some years ago, in the Government Secretariat deals with the subject, the technical adviser being the Sanitary Commissioner to the Government, who has also in his official capacity a general executive and advisory control over all the local plague organizations. So long as plague is confined in this Presidency to its present comparatively small dimensions, no further specialization of authority seems needed. If, however, the disease should spread widely, the Governor in Council agrees that the appointment of a special officer with large powers would be desirable, just as a special Famine Commissioner is appointed when a devastating famine has declared itself. In regard to the suggestion that a systematic examination of rats in plague-stricken districts should be conducted, especially before the re-appearance of the epidemic in the cold season, I am to state that the importance of the destruction of rats not only in infected but also in uninfected areas has already been recognised by this Government, and that local officers have been instructed to see that measures for the destruction of rats are universally adopted. A scheme drawn up by the Sanitary Commissioner for the systematic extermination of rats has been promulgated and instructions for obtaining bacteriological examinations at the King Institute have been issued, and it has also been ruled that when rat mortality has declared itself in a particular locality and when bacteriological examination has proved plague bacilli to exist, that locality should, apart from any ascertained human infection or mortality, be declared to be plague infected. As to the suggestion that the services of educated natives should be utilised for sanitary work in affected areas and that scholarships should be granted to those who have the requisite medical training, to enable them to proceed to England and fit themselves for employment as Plague Health Officers, I am directed to state that classes for the training of educated natives as sanitary inspectors were established in 1895, that since the outbreak of plague in 1898, men have been specially trained for plague work, that the training given has been progressively improved and that every effort is being made to advance the knowledge imparted. The Government have also approved the proposal that, where funds permit, District Medical and Sanitary Officers should be provided, at the cost of local funds, with the services of sanitary assistants for the supervision of sanitation and vaccination ; and five districts have already been supplied with such officers. These sanitary assistants are selected from the grade of Civil Assistant Surgeons or from graduates of the Medical College, and are required to undergo a five months' course in minor sanitary engineering ; and from 1st April, 1908, preference is to be given to men possessing a University degree in Sanitary Science. It is under contemplation to give these officers a special training in bacteriological and

microscopical work also at the King Institute. In these circumstances His Excellency the Governor in Council considers that it is scarcely necessary to offer scholarships for the special study in Europe of plague.

Enclosure 3 in No. 2.

Letter from H. O. Quin, Esq., I.C.S., Secretary to Government, to the Secretary to the Government of India, Home Department (Sanitary—Plague), No. 1611-P. General Department (Plague), dated Bombay Castle, the 10th November, 1906.

(Extract.)

His Excellency the Governor in Council has had under very careful consideration your letter No. 872-Sanitary—Plague, dated the 9th May, 1906, regarding the memorandum on plague submitted to the Secretary of State for India by the Royal College of Physicians. The Government of India desire to be informed of the views of this Government on the following points :—

(i) The practicability, so far as it is not anticipated by existing arrangements, of a scheme formulated by the Royal College of Physicians for the creation of a special medical and sanitary organisation for dealing with plague in selected localities, of which the main features are—
   (*a*) that it should consist of officers of the Indian Medical Service and physicians brought out from England, having under their control a large staff of male and female native medical assistants, the whole working under the direction of a special head-quarters department ; and
   (*b*) that it should be divided into three sections : an intelligence branch, a sanitary branch working at practical measures on the scene of the outbreak and a bacteriological branch.

(ii) The utilisation of educated natives of India in a sanitary service for work in plague-infected areas, in order to obviate the expense either of increasing the Indian Medical Service or of specially importing physicians from England.

(iii) The grant of scholarships to such natives of India as have the requisite medical training to enable them to proceed to England and fit themselves by a course of study in laboratories and elsewhere for ultimate employment in India as Plague Health Officers.

With reference to the first point, I am directed to state that, after consultation with the Surgeon-General with this Government, who was asked to obtain the opinions of the Sanitary Commissioner for this Government and of such other officers as he thought were likely to give useful advice, His Excellency in Council has come to the conclusion that in the present state of our knowledge as to the causes of plague, the circumstances favourable to its development and the methods by which it spreads from one locality to another, the creation of a Special Plague Department such as that suggested by the College of Physicians would not be of any practical utility. It is possible that the investigations now being carried on at the Bacteriological Laboratory at Parel may lead to discoveries which may indicate how plague is to be averted or cured, but, so far, the uncertainty as to the conditions which generate the disease is such that to the Governor in Council it seems impossible for Government to do more than endeavour to deal with an outbreak, when it occurs, by evacuation, inoculation and good hospital arrangements for all who are willing to take advantage of them. The establishment of such a Special Plague Department as is suggested would, in the opinion of this Government, involve, almost necessarily, the re-introduction of a certain number of the compulsory measures which have already been tried, and the failure of which has been signally demonstrated. An elaborate Intelligence Branch, for instance, would be of very little use unless people are compelled to give information as to matters

which it is often their chief desire at the moment to conceal, and the house-to-house investigation suggested by the Royal College of Physicians would certainly be impracticable unless Government were prepared to face again the popular opposition which was aroused by that measure when adopted some years ago. Surgeon-General Greany is of opinion that the scheme formulated by the Royal College of Physicians has been drawn up without sufficient regard to the differences between the conditions of life in India and those obtaining in the more advanced European countries, and that while in a highly civilised and highly organised community such a scheme could no doubt be carried out without much difficulty, in a country like India it seems, for the present at least, to be impracticable. In this opinion, I am to say, the Governor in Council concurs. As regards the special measures proposed under the scheme, it is observed that special prominence is given to the disinfection of the houses or huts with an improved fumigating apparatus capable of destroying rats, bugs, fleas and all insects in the house. Such an apparatus has, so far as the Governor in Council is aware, yet to be invented, and looking to the flimsy nature of the huts occupied by so large a proportion of the people of this country, it would seem almost impossible that thorough fumigation—and nothing less would be effective—can ever be obtained in India. The Plague Research Commission working at Parel has, it is believed, come to the conclusion that plague is a disease which is communicated to man chiefly by the bite of the rat flea (pulex cheopis), and it has shown that the plague germ can exist for only a very short period outside the bodies of living creatures. In view of these discoveries it would appear inadvisable to incur the large expenditure which disinfection and such like measures would entail when carried out on the extensive scale and with the elaborate arrangements for supervision recommended by the Royal College of Physicians. The second measure proposed is the wholesale destruction of rats. This year the poisoning of rats on a large scale was tried in Bombay, but the Surgeon-General informs Government that this had no marked effect in checking the spread of the disease. The operations appear to have resulted in the destruction of a number of brown rats of the species "mus decumanus," which live in the gullies and drains, but left untouched those of the species "mus rattus," which live in the houses with the people. It is, in Surgeon-General Greany's opinion, more than doubtful if this is a good plan, as it is "mus rattus" we wish to destroy and replace, if possible, by "mus decumanus," and he states that he is forced to conclude that we have not enough knowledge to make us certain that we can do very much good by this measure. Improvement in the building of dwelling houses and the isolation of all granaries and stables from human habitations would, in the Surgeon-General's opinion, prove more effectual in banishing "mus rattus" from our midst than any measures such as poisoning. But of course, as he points out, such improvements can only be carried out by slow degrees. I am to transcribe the following passage from the Surgeon-General's report, and to say that it has the general concurrence of His Excellency the Governor in Council :—

> "The prophylactic measures referred to in the scheme, I presume, include evacuation and inoculation. These in the opinion of the scientific expert are the only measures under the conditions now prevailing in India that are of any practical value in combating plague, and on them must the Sanitarian, for the present at least, rely. Unfortunately evacuation is not always practicable, and inoculation, so far, has not been popular. Since plague began in this country many and various schemes have been tried to eradicate it, but all have been either only temporarily successful or have failed entirely in their object. The want of success has not been due to the lack of energy or thoroughness in carrying them out, but has been due for the most part to the want of co-operation on the part of the people. Co-operation is of vital importance, and in it lies the key to success. Without it no sanitary measures, however conscientiously and efficiently carried out, will succeed in stamping out plague. As the people come to understand Western sanitation and the good results that follow its adoption, their distrust and resentment will gradually disappear, and then only will there be any hope of obtaining a whole-hearted co-operation. It cannot, however, be expected that the ignorance and prejudices of such a heterogeneous mass as forms the population of India will disappear in a day. The process of education in sanitation must be gradual.
>
> "I consider, therefore, that the scheme of the Royal College of Physicians, while it would involve a very great expenditure of money, would not prove any more successful than the many schemes which have already been tried."

In connection with the suggestion for the creation of an Intelligence Branch a passing allusion has been made above to the difficulty which would be experienced in obtaining important particulars regarding outbreaks of plague. I am now to invite your attention to the following observations of Captain Liston, the senior member of the Plague Research Commission on this subject:—

> "The Plague Commission have attempted, with the aid of the elaborate organisation of the Bombay Municipal Health Department, to trace the origin and spread of the plague in Bombay. It was soon found that any detailed investigation of each case, in spite of the employment of the large and trained staff of the Health Department, was practically impossible; only broad generalisations as to the association of human cases with plague-infected rats could be made. This result was more or less anticipated in the town itself, but it was thought that a more careful and complete observation under the direct supervision of the Plague Commission might be made in four small villages in the Bombay Island, viz., at the isolated villages of Parel, Worli, Sion and Wadala. The people in these villages were assembled, the objects of the Commission were explained to them, viz., that the Commission were anxious to find out the cause and origin of plague in these villages, and therefore they wanted the co-operation of the villagers and undertook that if they gave early information regarding the occurrence of dead rats or the appearance of plague cases, they would be interfered with in no way either by the Commission or the Municipal Health Department; they would not be turned out of their houses, nor would they be inconvenienced by any compulsory measures of disinfection. Moreover, the Commission were willing to assist them in any way they desired to combat the plague. The Commission asked them to choose among themselves a man who could act as clerk and take charge of rat-traps set in the houses of the village. This man was to visit every house at least once or twice a week so that every villager could become familiar with him and know the purpose of his visits. A Hospital Assistant with a dispensary was established in each village to attend to the sick free of charge; drugs were also supplied free. In spite of this, early information regarding the outbreak of plague in the villages was not got, death from the disease being generally the first information obtained. Dead rats when found were, as a rule, thrown out, and the fact that rats had died in a house was discovered by the evacuation of the house by the tenants. In one instance a clerk in the Laboratory, who lived in one of the villages under observation, was attacked with plague. This clerk was perfectly aware of the objects of our inquiry, yet only when he became ill did the Commission discover that his uncle and niece had died of plague some days previously to his attack, their deaths having been recorded as "Elephantiasis" and "Fever with Bronchitis." These patients were actually ill when an adjoining room of the same house was visited, where we had ascertained that a plague case existed. The reasons for this concealment are extremely hard to find out, but this defect, associated with barefaced lying to cover the concealment, seems to be inherent in the character of the native of this part of India at any rate."

The scheme of the Royal College of Physicians includes the maintenance of a Sanitary Branch working at practical measures on the scene of the outbreak. With reference to this, the Surgeon-General has expressed the opinion that results more commensurate with the expenditure involved would be gained by permanently increasing the existing Sanitary Department and including in it specially trained officers and subordinates, the question of dealing with all epidemics being left to that Department. I am to observe that the question of strengthening the Sanitary Department of this Presidency for ordinary work is now being considered by this Government, and that His Excellency in Council is of opinion that if any additional and special staff are to be entertained for dealing with plague, that portion of it which would be employed in the Bombay Presidency should form a branch of the Provincial Sanitary Department. As regards the bacteriological investigations suggested by the Royal College of Physicians, I am to point out that such investigations are already being undertaken by the Bombay Bacteriological Laboratory and am to say that, in the opinion of the Governor in Council, this arrangement satisfies all the requirements in this respect. If necessary, the staff of that institution could be increased as occasion arose. The proposal to utilise educated natives of India in a Sanitary Service for work in plague-infected areas is one which, I am to say, commends itself to this Government. The measures now under consideration with the object of strengthening the Sanitary Department of this Presidency include the appointment of qualified Assistant Surgeons as Assistants to the Deputy Sanitary Commissioners, and in the event of its being at any time decided to organise a special branch for dealing with plague, the Governor in Council would certainly propose that some of its members should be educated natives of India. I am at the same time, however, to point out that it will be necessary always to arrange for adequate supervision by officers of the Indian Medical Service. Adverting to

the last point mentioned in my opening paragraph, I am to state that the Governor in Council, after careful consideration, has come to the conclusion that it is not necessary to give scholarships for the training in England of natives of India for employment on sanitary work. Satisfactory arrangements for such training can, it is thought, be made in Bombay without difficulty. On this point the Surgeon General remarks as follows :—

> "The proposal that scholarships be granted to enable natives of India to go to England for training in Sanitary Science is in my opinion quite unnecessary. When the laboratories now being established in the various Presidency towns get into working order, there will be no necessity to send students of Hygiene out of this country. The abundant material available in India for the study of tropical diseases would make it an easy matter to arrange courses of instruction in the laboratories and to give practical demonstrations, under local conditions, of much greater value to Indian medical students than anything they could learn in England. It is in fact difficult to conceive a better training ground than the country in which plague is epidemic."

Enclosure 4 in No. 2.

Letter from J. C. Fergusson, Esq., Under Secretary to the Government of India, Home Department, to the Secretary to the Government of Bombay, General Department (Plague), No. 2231, dated Calcutta, the 18th December, 1906.

I am directed to forward, for the information of the Governor in Council, a copy of a memorandum* on plague in Poona, by Dr. W. J. R. Simpson, in which he has related his experiences during a visit to that town in September, 1906, and has severely criticised the measures taken there for dealing with the plague epidemic. I am to request that, with the permission of the Governor in Council, the Government of India may be furnished at a very early date with a report on the arrangements at Poona which are commented on in the memorandum.

Enclosure 5 in No. 2.

Letter from R. E. Enthoven, Esq., I.C.S., Acting Secretary to the Government of Bombay, General Department (Plague), to the Secretary to the Government of India, Home Department (Sanitary—Plague), No. 418-P., dated Bombay Castle, the 26th March, 1907.

I am directed to reply to letter No. 2231, dated December 18th, 1906, from the Government of India in the Home Department forwarding certain criticisms* of Dr. Simpson on the measures adopted to cope with the last plague epidemic in Poona City.

2. I am in the first place to remark that His Excellency the Governor in Council observes with no little surprise that no attempt was made by Dr. Simpson to communicate with the local officials and to ascertain the true facts of the case before formulating his indictment against the authorities. Dr. Simpson has referred to the complaints evoked by the apparent callousness and indifference of the authorities, and offered his opinion that ample justification for these complaints existed in the fact that no help was given until two months of the epidemic had passed. I am directed by His Excellency the Governor in Council to record an emphatic protest against the use of language of this description. Dr. Simpson's statement that "no help was given until two months of the epidemic had passed" has no foundation in fact, and I am now to furnish for the information of the Government of India a full account of the measures adopted for dealing with the epidemic.

3. The arrangements for dealing with plague in Poona City, with the exception of the management of the General Plague Hospital, are made by the municipality, who annually on the outbreak of an epidemic appoint a committee for the purpose of supervising plague measures. The special measures adopted by the municipality in face of the epidemic of 1906 are described below. To assist the Municipality Captain McPherson, I.M.S., Superintendent of Plague Operations for this Presidency, addressed a public meeting in July, when an epidemic seemed imminent, on the subject of plague and the best means for

---

* *See* p. 4.

combating it. He pointed out to the people that the two most effective measures for dealing with an epidemic were—

(1) the evacuation of infected areas,
(2) inoculation.

At this meeting many of the leading citizens of Poona were present, and it was strongly impressed on them, both by the Collector, who presided, and by Captain McPherson, that they should use their influence in popularising these measures. A few days later, Captain McPherson invited all the medical practitioners of Poona to meet and discuss measures for encouraging inoculation, but the meeting was scantily attended. In August, an inoculator was placed at the disposal of the municipality in connection with their scheme for offering rewards for inoculation. On the 8th September, when the severity of the epidemic had become more marked, the Honourable Mr. Fulton held a meeting with the Collector, the President of the Municipality and the Superintendent, Plague Operations, to consider whether anything could be done to supplement the measures adopted by the municipality to stay the progress of the disease. The President of the Municipality then reported that there was ample accommodation in the Health Camps for all who wished to evacuate their houses in the city, and that every facility for inoculation was being offered. It was, however, agreed that another inoculator might be of use to the municipality, and the services of a second were therefore placed at their disposal. About a week later a further conference was held. The accommodation in the Health Camps, and the arrangements for inoculation, were found to be all that was required. At the Plague Hospital, under the supervision of Captain McPherson, ample accommodation was available for all who sought admission. At no time did the number of patients exceed 250, although the hospital could without difficulty have provided accommodation for 800. It is to be remarked that Dr. Simpson is reported by the Surgeon-General to have visited this hospital and expressed his satisfaction with the arrangements made for the comfort of the patients.

4. I now pass to the measures taken by the municipality. These consisted of the following :—

(1) *Collection of information of cases and deaths.*

No separate establishment was maintained for this work. The work was entrusted to 31 subordinates of the municipality who visited every lane and street daily.

(2) *Registration of cases and deaths.*

An establishment of four clerks was especially engaged for this work, and issued passes for the removal of the dead.

(3) *Disinfection.*

A special establishment of one hospital assistant, three supervisors, and such coolies as were required was entertained. Houses in which dead rats were found or in which cases had occurred were disinfected with perchloride of mercury.

(4) *Removal of the sick.*

All who were willing to go to the General Plague Hospital were removed by a special staff, consisting of an ambulance and driver, one supervisor and two coolies, unless the relations preferred to make their own arrangements for the removal. In the greater number of cases the sick were privately removed to hospital.

(5) *Erection and maintenance of Health Camps.*

Five camps were maintained by the municipality in different localities. Each camp was in charge of a clerk and watchman, and the lighting and conservancy were provided by the Health and Engineering Departments of the Municipality. These camps provided accommodation for 3,500 persons. In addition, a very large number of private health camps were erected. The conservancy and lighting of these camps were also duly supervised. It was found that the people preferred to select their own sites for camping, and no objection was raised to this course, the municipality confining its assistance to the conservancy and lighting arrangements.

(6) *Medical relief.*

In addition to the Plague Hospital, a staff of twelve L. M. and S's., as many hospital assistants, and eight *Vaidyas*, treated patients in their houses.

For those who could not afford to call in any of the above, a special staff, consisting of a medical officer, two hospital assistants, and two compounders, was employed to treat such cases in their houses, and supply such medicine, clothing, and nourishment as was necessary.

(7) *Rat extermination.*

A special establishment of one inspector, five supervisors, and the necessary coolies was in charge of rat destruction. Traps were supplied, properly baited, and a reward of 6 pies per living rat and 3 pies per dead rat paid.

(8) *Inoculation.*

The Municipal Health Officer, aided by three assistant surgeons with three clerks and three coolies, performed inoculations, assisted further by the Assistant Surgeon of the Khan Bahadur Pestonji Sorabji Charitable Dispensary. In all 4,500 were inoculated, rewards of from 2 to 8 annas being paid in each case.

5. With reference to these municipal measures, it may be admitted that the operations for the disinfection of houses and killing of rats were on a small scale. But the municipality cannot be taken to task for not embarking on a large expenditure in these directions until really efficient methods have been devised. Disinfection by perchloride of mercury is admittedly of very little use. Pesterine was tried without any appreciable result. Fumigation to kill vermin is beset with great difficulty in houses with bamboo and tile roofs, which the rats affect; and fumigation only temporarily rids a house of rats. In fact it must be borne in mind that the municipal action was severely limited by the necessity of obtaining the co-operation of an ignorant population, and by the fact that no efficient preventive of plague has yet been discovered.

6. Dr. Simpson has referred in his communication to the recommendations made by the Royal College of Physicians. In this connection I am to invite your attention to letter No. 1611-P. of November 10th, 1906, from this Government, in which the proposals of the College of Physicians were discussed. For the reasons therein given it has not been found possible to adopt their suggestions.

7. His Excellency the Governor in Council admits with regret the terrible ravages of the plague epidemic in Poona City during the past monsoon, and he is fully aware of the distressing consequences that such an epidemic must produce in the social life of the local population. I am directed, however, to remark that Dr. Simpson's insinuation that this Government were either callous or indifferent to the sufferings of the people is utterly baseless, and is entirely inconsistent with the whole history of plague administration in this presidency. In formulating his indictment Dr. Simpson appears deliberately to have ignored the fruits of ten years' experience of plague measures in Bombay. It has been clearly established that no useful results can be secured by forcing preventive measures on an unwilling population. The inhabitants of Poona suffered acutely from the ravages of the recent epidemic; but they would have actively resisted any attempt to shield them from its effects by such compulsory measures as have been adopted by this Government in the past; and it cannot be denied that these measures have been followed by signally incommensurate results.

Enclosure 6 in No. 2.

Letter from H. J. McIntosh, Esq., I.C.S., Officiating Secretary to the Government of Bengal, Municipal (Medical—Plague) Department, to the Secretary to the Government of India, Home Department, No. 73-Med.—P., dated the 24th January, 1907.

(Extract.)

I am directed to acknowledge the receipt of Mr. Fergusson's letter No. 873, dated the 9th May, 1906, forwarding a copy of a despatch from the Secretary of State in which the Government of India is asked—

(I) To consider and report upon the practicability, so far as it is not anticipated by existing arrangements, of a scheme formulated by the Royal College of Physicians for the creation of a special medical

and sanitary organization for dealing with plague in selected localities, of which the main features are—

(*a*) that it should consist of officers of the Indian Medical Service and physicians brought out from England, having under their control a large staff (to be gradually increased in numbers and trained to greater responsibilities) of male and female native medical assistants; the whole working under the direction of a special head-quarters department; and

(*b*) that it should be divided into three sections:—an intelligence branch, a sanitary branch working at practical measures on the scene of the outbreak, and a bacteriological branch:

(II) To send copies of any instructions recently issued by local Governments to their officers explanatory of their plague policy and to report whether, in the opinion of the Government of India, all that is possible in the way of affording relief is being done:

(III) To consider suggestions made—

(*a*) for the systematic examination of rats in plague-stricken districts, especially before the reappearance of the epidemic in the cold season, with a view to the inception of active measures for their destruction if they are found infected;

(*b*) for the utilisation of educated natives of India in a sanitary service for work in plague-infected areas, in order to obviate the expense either of increasing the Indian Medical Service or of specially importing physicians from England;

(*c*) for the grant of scholarships to such natives of India as have the requisite medical training to enable them to proceed to England and fit themselves by a course of study in laboratories and elsewhere for ultimate employment in India as plague health officers; and

(IV) To report in what way, if any, the Royal College of Physicians can assist the Government of India in combating plague.

In order to furnish the information required by the Secretary of State, the Government of India desire to be informed of the Lieutenant-Governor's views on the points referred to in Clauses I, III (*b*), and III (*c*), and to be furnished with copies of any instructions which have been issued recently by this Government explanatory of its plague policy. I am to say that the Inspector-General of Civil Hospitals, Bengal, the Sanitary Commissioner, Bengal, the Chairman of the Calcutta Corporation, and the Commissioners of Bhagalpur and Patna (the two divisions in this province where plague is chiefly prevalent) were consulted on the subject. I am now to submit, for the information of the Government of India, a copy of their replies, and to invite special attention to the replies received from the Inspector-General of Civil Hospitals, Bengal, and the Sanitary Commissioner. It will be seen that generally speaking the officers who have been consulted are not in favour of the institution of any such special medical and sanitary organization as is contemplated in the scheme advocated by the Royal College of Physicians. In existing circumstances when plague breaks out in a district, the local officers, Medical and Civil in combination, deal with it so long as it is within their capacity. When it exceeds that limit, special medical officers are deputed to supervise the plague work, and these in combination with the civil officers form their own intelligence branch. It is far from probable that the institution of a special department and of a special organization for the purpose of obtaining information as to cases of plague or suspected plague would lead to any improvement in this direction; at all events to any improvement which would be at all commensurate with the expenditure involved. It is exceedingly doubtful whether in rural areas extensive disinfection or fumigation such as is apparently advocated by the Royal College of Physicians is of much value. No doubt if these measures could be efficiently carried out they would be useful; but the practical difficulty of disinfecting or fumigating with any success the bamboo and mud huts in which the greater portion of the population of this province lives is

very great; and it is not unlikely that more harm than good would result from the adoption of the system proposed. There is now a consensus of expert opinion that rats and the vermin which infest them are the chief agency in the spread of plague. Plague measures in rural areas are now chiefly directed to the evacuation of houses when rats commence to die, and to the killing of rats at all times, but particularly before the breeding season. It seems obvious that the carrying out of these or similar measures must to a large extent depend on the people themselves, and that it would be hopeless to attempt to enforce such measures through any paid organization. When plague first broke out in this province, organizations somewhat on the lines now proposed were started. Large sums of money were expended in wages and disinfectants; but practically no useful result was obtained. There are, therefore, very grave reasons for doubting whether the measures proposed by the Royal College of Physicians would be any improvement upon the existing system; and they would certainly entail a very great expenditure. Other practical difficulties that would have to be overcome before effect could be given to the proposals are very forcibly stated by the Inspector-General of Civil Hospitals, Bengal. An integral part of the contemplated scheme is the institution of a Bacteriological section who would carry out laboratory work at the various administrative centres in close association with the proposed Intelligence and Sanitary branches. The Sanitary Commissioner has stated that what is really required at present is a fuller knowledge of the life history of the plague bacillus and its *habitat* in what is known as the "quiescent period." He is therefore much more in sympathy with that part of the proposal which deals with bacteriological research work, both in the laboratory and at the scene of the epidemic. He does not, however, consider that any new organization is necessary, but thinks that all that is required could be met by strengthening the existing Sanitary Department under the Sanitary Commissioner with the Government of India. The Lieutenant-Governor agrees in the main with the opinions which have been expressed by the officers consulted. While fully accepting the general principles underlying the proposed scheme and acknowledging the generous offer of assistance which has been made by the Royal College of Physicians, His Honour does not think that the scheme would, in existing circumstances, be practicable, or that the results that might be hoped for would be commensurate with the expense. He is therefore not in favour of the creation of a special medical and sanitary organization such as has been advocated. He is, however, strongly in favour of extensive bacteriological research work, both in the laboratory and at the scene of the epidemic; and he would welcome any suitable proposals to this effect. It is probable, however, that Captain Clemesha is correct in thinking that no new organization is required for this, and that it would be sufficient if the existing Sanitary Department under the Sanitary Commissioner with the Government of India were strengthened, and if more adequate arrangements were made for the early deputation of special officers to the scene of the epidemic. It is, however, essential that the officers of the Sanitary Department who are deputed to carry out research work at the scene of the epidemic should work in co-operation with and subject to the general (non-professional) control of the District Officer. With regard to paragraph 3 (*b*) and (*c*) of Mr. Fergusson's letter, the Lieutenant-Governor is certainly of opinion that the services of carefully selected educated natives of India should be utilized for research work, so far as suitable men can be obtained. He would not, however, recommend that any physicians should be specially brought out from England except for laboratory work, and then only under exceptional circumstances. Suitable natives of India should, so far as is possible, be trained for practical sanitary work and for research. They should be trained in this country, but a certain number of carefully selected men who give good promise might be granted scholarships to enable them to proceed to England and fit themselves by a course of study in laboratories and elsewhere for ultimate employment in India as Plague Health Officers.

Annexure 1.

Letter from Captain W. W. Clemesha, M.D., D.P.H., I.M.S., Offg. Sanitary Commissioner, Bengal, to the Secretary to the Government of Bengal, Municipal Department, No. 3557, *dated Calcutta, the* 15*th June*, 1906.

I have the honour to acknowledge the receipt of Government Order No. 110 T.—P., dated the 24th ultimo, asking for an expression of my opinion on the points referred to in Clauses I, III (*b*) and III (*c*) of Paragraph 1 of the Government of India, Home Department, letter, forwarded therewith, regarding a scheme formulated by the Royal College of Physicians for the creation of a special medical and sanitary organization for dealing with plague in selected localities.

2. In reply, I have the honour to state as follows :—

Clause I.—I am not in favour of the establishment of a special medical and sanitary organization on the lines laid down by the Royal College of Physicians, principally because the time has now passed when it can be of much use. If the scheme had been brought into operation as soon as plague made its appearance in a Province, it might have helped in reducing the sufferings of the people and in increasing our knowledge of the disease. But at this stage, it would be a complete change of policy, and it is very doubtful if the proposed measure would be an improvement. Plague measures in the rural areas will probably resolve themselves into obeying one or two very simple instructions, such as "Kill rats at all times but particularly in February and September before the breeding season, and evacuate houses when rats commence to die." Now it is obvious that the carrying out of these or similar measures must to a large extent depend on the people themselves. The cost of any organization to carry out even these simple instructions for a large province would be enormous ; besides it is not the right way to set about the matter. The people must be taught to do these things for themselves. The money necessary for an expensive organization, such as is proposed, would be infinitely better spent by placing it at the disposal of Magistrates of Districts and Subdivisional Officers for creating small object-lessons to the people of their districts and in helping the poor for carrying out these simple instructions.

In nearly every place where Plague broke out, an organization, more or less on the lines of the one proposed, was started. Very large sums of money were expended in wages and disinfectants, but the resulting good was not at all in proportion to the expense incurred. The people are naturally suspicious of all newly constituted authorities; whereas they will frequently take advice from the District Officials whom they know. I have always strongly maintained that the proper people to carry out Plague measures are the District Officers, and that it is infinitely better and cheaper to give an extra I.M.S. Officer and a couple of young Civilians to each district than to engage a large staff of subordinates of no recognised position.

What we are really in need of is knowledge of the life history of the Plague bacillus and its habitat in what is known as the "quiescent period." Therefore I am much more in sympathy with the part of the proposal that deals with bacteriological research work, both in the laboratory and at the scene of the epidemic. I consider that every available officer who is qualified should be employed in elucidating these problems; for this, no new organization is necessary, it simply requires that the existing Sanitary Department under the Sanitary Commissioner with the Government of India should be strengthened numerically.

To condense the above into a few words, I consider that as regards the Intelligence Branch and the Branch working at practical preventive measures, better results will accrue if they are left to the District Officers, but that more may be done in the way of investigation of the various problems that are at the foundation of the prevention of the disease.

I wish to state that I am particularly averse to bringing men out from home for anything but research work, because as administrative officers they are both expensive and inefficient.

Clause III (*b*).—Carefully selected educated natives may be of great use in plague preventive work, but by far the majority are of very little good in this Province. The best educated class, viz., the Bengali, will not live in a tent, cannot ride, and is of very little use in district work. In cities they may be of more use.

Clause III (*c*).—I do not approve the suggestion contained in this clause, because we have far greater facilities for teaching useful and practical sanitary work in this country than exist at Home.

Annexure 2.

Letter from the Honourable Mr. C. G. H. Allen, I.C.S., Chairman of the Corporation of Calcutta, to the Secretary to the Government of Bengal, Municipal Department, No. 3460-*H., dated Calcutta, the* 3*rd July*, 1906.

With reference to your letter No. 141-T. P., dated the 2nd June, 1906, I have the honour to forward herewith the opinion of the Special Health Officer on the scheme formulated by the Royal College of Physicians for the creation of a special medical and sanitary organisation for dealing with plague in selected localities, and to say that I have nothing to add to it.

OPINION.

CHAIRMAN—

With reference to the letter of Government asking for an expression of opinion concerning—

(1) Scheme of Royal College of Physicians.
(2) The utilization of educated natives in a sanitary service.
(3) Grant of Scholarships to natives to pursue special training.

1. The scheme is not very clearly detailed, but it evidently involves a comprehensive organisation and a large staff. It is apparently intended for plague only. I cannot see the force of having two sets of medical officers, Sections A and B. The officers who obtain the knowledge of plague cases are the best men to have the duties of Section B carried out. With regard to Section A (1) I suggest the organisation adopted in Calcutta, viz., qualified native medical men to enquire into the causes of every death for living cases of plague.

There is plenty of information already available concerning the incidence of the disease in dwellings and areas and of the epidemiology of the disease in the various plague reports from different parts of the country.

Concerning Section B (1) there has yet to be invented the fumigating apparatus which will destroy the vermin alluded to in bamboo and mud huts whether in town and country.

It is absolutely necessary to have the space made air-tight, and this is impossible. The only apparatus of the kind in existence is Clayton's, used for the destruction of rats on board ship. This apparatus has been recently reported upon by an officer of the Local Government Board and has been shown to be effective for this purpose on board ship. The paragraph in the memorandum concerning the fumigating operation is useless. Some *pucka* buildings might be so treated, but for huts there is no known method of disinfection of any appreciable value.

Section B (2), *Destruction of rats.*—This I am strongly in favour of, and it might be carried out more systematically and thoroughly.

Section C refers to laboratory work but involves a skilled bacteriologist. This scientific section is absolutely necessary to assist and confirm the work of the executive and administrative officers of the other two sections.

2. With regard to Clause III (*b*) there is no difficulty. And the same may be said of Clause III (*c*).

3. The scheme seems to include only :—

(*a*) the discovery of cases,
(*b*) the recording of information concerning the incidence of cases,
(*c*) the disinfection of dwellings,
(*d*) the destruction of rats,
(*e*) local bacteriological work.

All these as a matter of fact are done now, and with regard to "general administrative and prophylactic measures" there is nothing mentioned.

I understand the plague policy of the Government of India to be—

(*a*) to discover and record cases and deaths,
(*b*) to disinfect wherever possible,
(*c*) to evacuate dwellings where feasible, and I cannot see that the scheme of the College of Physicians goes beyond what is already being done.

4. My own opinion from all recent evidence is that the disease is spread chiefly by means of the rat. If that be admitted, measures must be directed towards the extermination of these vermin. Permissive legislation for this purpose is hopeless. The active work carried out in Australia (Sydney) has apparently been the means of subduing the disease there, but the evidence that the partial destruction of the rat population in the cities of India has had any appreciable effect is very slight. Co-operation by the people is wanting, and therefore this measure must be carried out by a special organization and by compulsion.

F. PEARSE,
Special Health Officer.

The 20th June, 1906.

Annexure 3.

Letter from D. J. Macpherson, Esq., C.I.E., Commissioner of the Bhagalpur Division, to the Secretary to the Government of Bengal, Municipal Department, No. 1078–J., dated Bhagalpur, the 22nd August, 1906.

With reference to your No. 139-T—P., dated the 2nd June, 1906, calling for an expression of my opinion on the points referred to in clauses I, III (*b*) and (*c*) in paragraph 1 of the Government of India's letter No. 873, dated the 9th May, 1906, regarding a scheme formulated by the Royal College of Physicians for the creation of a special medical and sanitary organisation for dealing with plague in selected localities, I have the honour to state that I have consulted the Magistrates of Monghyr and Bhagalpur (Messrs. Duval and Lyall), and the Deputy Commissioner of the Sonthal Parganas (Mr. Scroope) in whose districts there has been plague. I enclose a copy of Mr. Lyall's letter No. 1748–J., dated the 4th August, 1906, on the subject. The views of the others will be sufficiently apparent from the subjoined summary.

2. *Clause* I (*a*).—Mr. Duval, Magistrate of Monghyr, considers that it might be possible to largely increase the present Sanitary Department for the purpose of dealing with plague, but that whoever be employed in a district should be under its Civil Surgeon and not directly under a special head-quarters department. Mr. Scroope, the Deputy Commissioner of the Sonthal Parganas, thinks it eminently desirable that there should be a special medical organisation to deal with plague in those localities which are severely affected. Mr. Lyall, Magistrate of Bhagalpur, as will be seen from his letter, does not consider it necessary to have a special service for plague alone, but he would welcome the creation of a sanitary service in which educated natives of India would be employed, for combating at the same time malaria, cholera, small-pox and other diseases. On the whole, I agree with the views expressed by Mr. Lyall. I consider that it would be premature to establish a special service for dealing with plague alone, until the investigations at present being carried on into etiology of the disease have yielded definite results. So far, expert opinion seems to point to rats as the agency by which plague is spread throughout a locality. In so far as this is the case, no special medical or sanitary staff is needed to cope with the situation. It can be met by executive action on the part of Government and Municipal Officers, whose great endeavour should be made to enlist the co-operation of the people themselves. Personally I consider that much of the distrust and suspicion which plague measures excited in the earlier years of the epidemic in India was due to too free a hand being given to medical officers to enforce their theories in a drastic manner without paying sufficient regard to the customs and prejudices of the masses. Left to themselves, the people have now learnt by experience the advantage of prompt evacuation of plague-infected houses and villages, and are not slow to carry out this measure in practice. In the same way, except in the case of certain sections of the community who are averse from the taking animal life, there seems no reason why the people should not learn in time to co-operate with the authorities in destroying rats. No doubt, organised measures for effecting their destruction will require a strengthening of the staff at the disposal of the District authorities, but that staff need not consist of medical or sanitary experts, nor need the Civil Surgeon even have anything to do with its working, except as the professional adviser of the District Officer and Municipal authorities. Where expert aid is required, and required urgently, is in the matter of research, not only as to the agency by which the disease is spread, but as to the means by which, once it has got a footing, its germs persist in the locality from season to season.

3. *Clause* I (*b*).—Mr. Duval does not think that it would be possible to keep the Intelligence and the Sanitary branches in a district distinct. He says: "The amount of information available largely depends on the trust reposed in the seeker of it by the uneducated native, and I doubt whether the average native subordinate who would probably be sent would be able to secure the confidence of the people if all he did was to report, and leave it to another to take sanitary measures." At the same time he does not look on the Police as a good agency for the reporting of epidemics, but considers that a good combined staff working with the village panchayats under the Civil Surgeon to be what should be aimed at. As regards the bacteriological branch, he thinks that "it might be quite distinct and might be confined to large towns." He adds: "Its object, I gather, is to have the causation, prevention and cure of plague investigated, and then to instruct the sanitary staff how to deal with it. This I think would be of great use, but how far it would be necessary for this section to send its officers to tour in infected tracts is a matter on which I do not think I can express an opinion." Mr. Lyall would employ only a bacteriological branch. Mr. Scroope says nothing specific regarding this matter.

For the reasons I have already expressed, I see no necessity for a special sanitary staff of medical officers and subordinates working at practical measures on the scene of an outbreak of plague, and still less for an Intelligence branch of a special service. To my mind the more drastic the measures which the sanitary branch would enforce the less chance would an Intelligence branch have of succeeding. I am afraid much cannot in any case be done to secure early intelligence except by improving the work of existing agencies. The introduction of a special staff for the purpose, unless of an expensive nature, would lead to blackmailing and defeat its own object. By all means, however, let a special bacteriological staff be developed; there is great room for this in the country.

4. *Clause* III (*b*).—Messrs. Duval and Scroope support the suggestion made for the utilisation of educated natives of India in a sanitary service for work in plague-infected areas, and Mr. Lyall, as already observed, would welcome it also, provided it were to deal with other epidemic diseases besides plague. I quite agree that a sanitary service composed in the main of educated natives of India should be organised, but it should be at the disposal of the District Officer and not directly under the head of the Sanitary Department in the province, and its efforts should on no account be confined to dealing with plague.

5. *Clause* III (*c*).—Mr. Duval is generally for encouraging natives of India to go to England to study sanitation and public health, but thinks that if the bacteriological section had, as he supposes is intended, large laboratories in this country a large number could be trained in India without the expense of sending them to England. Mr. Scroope states that the proposal has his support. Mr. Lyall is not, however, in favour of it. I am disposed to agree with Mr. Duval. I think that well equipped and well conducted bacteriological laboratories should be established at suitable centres in India to enable bacteriological examinations to be carried out in large numbers with the requisite degree of promptness; and when these are in working order it should be possible to impart a sufficient training to natives of this country at such institutions. Selected young men who may show most promise at them may afterwards be encouraged by the grant of scholarships to proceed to Europe to acquaint themselves fully with the latest methods and results.

Annexure 4.

Letter from F. F. Lyall, Esq., Magistrate of Bhagalpur, to the Commissioner of the Bhagalpur Division, No. 1748-J., dated Bhagalpur, the 4th August, 1906.

With reference to your No. 760-J., dated the 11th June, 1906, asking for my opinion on clauses I, III (*b*), III (*c*) in paragraph 1 of the Government of India's letter No. 873, dated 9th May, 1906, I have the honour to reply as follows.

2. The special medical and sanitary organisation suggested would seem to be likely to be a very costly affair, and before it is embarked on, Government should, I think, be very clear that the result of any measures taken on such lines are likely to really reduce plague. Up to the last year or two researches seem to have yielded no very precise results in the direction of any means of reducing the extent or virulence of plague, except in the one vitally important direction that apparently a diminution in the rat population is likely to be attended with a diminution in plague. I therefore think that it would be unjustifiable to employ any but the bacteriological branch and that only if the state of the finances admitted of it. Until some more definite knowlege in prophylactic medical measures or sanitary measures is arrived at, expenditure on this head would be unjustifiable; and an agency to carry out a campaign against rats can be organised locally and much more cheaply than the proposed agency.

3. It follows from this that though I would advocate the utilisation of educated natives of India in this rat crusade, the need of a special sanitary service *for plague alone* does not appear to be clearly established. That such a service is needed in rural Bengal is undoubted; in fact, combating malaria, small-pox, cholera and other illnesses, is a long recognised want; and on general grounds I could not too warmly welcome the creation of such a service, provided funds are forthcoming for it. But when expert knowledge has so far been able to point only to rat extermination as the one hopeful measure, the need of such a staff for plague only is not made out.

4. For this reason also I would not uphold the proposal in clause III (*c*).

Annexure 5.

Letter from W. Maude, Esq., Commissioner of the Patna Division, to the Secretary to the Government of Bengal, Municipal Department, No. 39—G.-107-06, dated Bankipur, the 8th September, 1906.

I have the honour to acknowledge the receipt of your letter No. 140-T.—P., dated the 2nd June, 1906, with which you forwarded copy of a letter from the Government of India, No. 873, dated the 9th May, 1906, and of a memorandum on plague formulated by the Royal College of Physicians of England, and desired my opinion on the following points:—

(1) the desirability of forming a Plague Department consisting of officers of the Indian Medical Service and Physicians brought out from England, with a large staff under their control of male and female native assistants;
(2) the desirability of dividing such a department into 3 sections—
  (*a*) an intelligence branch;
  (*b*) a sanitary branch;
  (*c*) a bacteriological branch;
(3) the question of utilising educated natives of India in a sanitary service for work in plague-infected areas;
(4) the grant of scholarships to natives of India for a course of study in laboratories and elsewhere, with a view to employment as Plague Health Officers.

2. I have consulted the District Officers of this Division, and enclose copies of their reports. It will be seen that Mr. Thomson, Magistrate of Patna, and Mr. Foley, Magistrate of Gaya, do not consider a special Plague Department necessary, and that they lay stress on the primary need of finding out, in due course, by bacteriological research, the real origin of plague and therefrom its true prophylactics and remedies.

3. The scheme gives no hint as to the size of the proposed Plague Department, and it is altogether so vague that it is difficult to discuss it. It appears, however, that even on the smallest possible basis it would be a matter of very large expenditure, and the first question that naturally arises is whether the establishment of a elaborate department at great cost could be justified when we have no certainty that plague is going to remain in an epidemic form in this country.

4. In the second place the scheme appears to ignore the fact that any special measures in connection with the investigation into the causes of, and the check of, plague have ever been taken. The question arises, whether the proposals put forward by the Royal College of Physicians would be any real improvement on present methods. They propose to open administrative centres with a department, or portion of a department, in charge of each; and each centre is to have—(*a*) its intelligence officer, (*b*) its sanitary officers, and (*c*) its bacteriological officers.

What has happened hitherto has been that, when plague breaks out in a district, the local officers, medical and civil in combination, deal with it so long as it is within their capacity. When it exceeds that limit, Government supplies extra help, as has been done in the past two years in this Division, by the deputation of special Medical Officers for plague work. These officers have, in combination with the civil officers, been their own

intelligence branch, and I see no reason to imagine that the work would be more effectively done by a special department, unless Government is prepared to spend a very much greater amount on that department than it has spent hitherto on plague prevention. No doubt if Captains King and Weinman had had trained medical staffs and large intelligence staffs under them, they might have done more than they could do with the very limited materials at their disposal; but as far as intelligence and sanitation measures are concerned, there is nothing that a department could have done better than these officers did.

5. As to the bacteriological section, I am not in a position to judge, but the necessity of having a number of centres for bacteriological research is not apparent. The department already, I understand, exists, and can probably carry out its work best at a central station.

6. I do not therefore consider the necessity of a special Plague Department proved, nor do I see the object of separating the intelligence from the sanitary branches of such a department if it were created, of having a bacteriological branch at each centre.

7. I now turn to the question of utilising natives of India in the sanitary branch.

The chief work of the branch would appear from the memorandum of the Royal College of Physicians, to be—(*a*) disinfection, (*b*) destruction of rats, and (*c*) other prophylactic and administrative measures. The services of natives are already utilised in such measures. They are not trained, except by such training as they soon pick up under the direction and control of the Medical and Civil Officers, which appears to be sufficient. The work is not highly scientific. European supervision is essential.

8. The other question on which opinion is asked is the grant of scholarships to natives of India for pursuing a course of study in laboratories or elsewhere, with a view to employment as Health Officers.

This is surely unobjectionable, if Government is prepared to find the money.

Annexure 6.

Letter from W. B. Thomson, Esq. Magistrate of Patna, to the Commissioner of the Patna Division. No. M-323/12-06, dated Bankipur, the 6th July, 1906.

With reference to your No. G-39/79 of 3rd July, 1906, calling for a report on Clauses I, III (*b*) and III (*c*) of Government of India, No. 873, of 9th May, 1906. I have the honour to report as follows :—

I.—I do not anticipate that any substantial benefit would result from the creation of the proposed Medical Department. It is very probable that plague will never be stopped, until the nature of the microbe which causes it is ascertained and the means of counteracting it are discovered. This can only be done by a study of the microbe itself, and more particularly of the causes which make it active in certain localities and not in others, and which make its activity vary with climatic changes. There are already sufficient statistics to show the existence of these variations, and an Intelligence Department to collect further statistics seems to me quite unnecessary.

In speaking of disinfecting infected houses so as to destroy all rats, bugs, fleas, and other insects, so that the inhabitants should not be kept out of their houses more than a day, the Royal College of Physicians propose what practice has shown to be impossible in the Indian houses in which plague occurs. Disinfection is no doubt useful, but it has its limitations. The outbreak of plague in a house means that the rats in the locality are infected, and even if a house could be disinfected as thoroughly as it is proposed to be done, plague will be liable to re-appear in it as soon as any fresh rats gain admission to it.

Bitter experience has shown that, whilst disinfection is useful, evacuation is the only absolute safeguard. The destruction of rats is a desirable object, but this can be done by a less expensive agency than that proposed.

The one part of the proposal which commends itself to me is the study of the disease from a bacteriological point of view. The destruction of rats and disinfection and evacuation of houses and improved sanitation, which are the only measures at present of any practical use, may lessen the ravages of plague, but they alone will never stop it. The only hope of doing so seems to be in the discovery of the nature of the plague microbe, the causes which render its activity dependent on seasons and localities, and the means of counteracting it, and this discovery can only be effected by scientific investigation.

2. III (*b*).—An agency less expensive than increasing the Indian Medical Service can be found among the educated natives of India. The reduction of plague by improved sanitation is entirely a question of the funds available for it.

3. III (*c*).—A Plague Health Officer does not need the elaborate training proposed. His duties are purely executive, and scientific researches should be left to experts.

Annexure 7.

Letter from B. Foley, Esq., I.C.S., Magistrate of Gaya, to the Commissioner of the Patna Division No. G-181/6, dated Gaya, 11th July, 1906.

(Extract.)

I have the honour to acknowledge the receipt of your No. G-89/79, dated 4th July, 1906, forwarding correspondence about a scheme formulated by the Royal College of

Physicians for the creation of a special medical and sanitary organization for dealing with plague, I am desired to report on the points referred to in paragraphs I, III (*b*), and III (*c*) of the letter of the Government of India of 9th May, 1906. With reference to paragraph I, the scheme seems a workable one, if expense is no object. To be effective, however, the Plague Department must be a department of the Local Government, and the local plague officers must form part of the district staff. A separate organization working independently of the district officials would probably not be able to do much good, but it should not be difficult to amalgamate the organization proposed with the district staff. The question that arises however, is, whether the time has yet come when the enormous expenditure which the scheme will entail should be incurred, or whether it would not be better to wait till more is known about plague and till it has practically been ascertained for certain what are the best methods to deal with plague before planning an elaborate organization to enforce the best methods that are known at present. Of course my opinion on the subject is of no value, but it seems to me that the time has not yet come for a scheme like that proposed by the Royal College of Physicians. When plague first appeared in India nothing was thought effective except the isolation of the infected and the segregation of the contacts. This was subsequently found impossible to enforce and useless, and reliance was placed on disinfection. It has lately been decided that disinfection is generally useless and nothing is effective except the destruction of rats. In what exact manner, however, rats communicate the disease has not yet apparently been definitely determined, and it is merely known that it is a good thing to kill all rats in a place infected with plague. It is not impossible that shortly it may be discovered that other measures are necessary for the stamping out of plague, and that the destruction of rats is only a detail; what is wanted is that the causes of plague should be investigated and that the necessary measures for combating it should be discovered. This, I believe, is being done sufficiently by the establishments that now exist in India. It would be premature at present to introduce an elaborate sanitary service for the purpose of enforcing measures which the present imperfect knowledge of the subject only tentatively assumes to be the best. The waste of money that would probably be involved would be great. With reference to paragraph 3 (*a*), I should have thought the examination of rats in plague-stricken districts was sufficiently systematic in India, and that more Medical Officers were not required to be sent out in order to deal with this subject. Speaking for the town of Gaya, which suffers more from plague than any other town in this district, rat killing goes on throughout the year. The measures taken for the destruction of rats when plague reappears would not, I think, be more active than those taken at present, even if every rat that was killed were examined and every infected rat detected. With reference to paragraph 3 (*c*), the plague health officers that are required in this district are not men that have been highly trained in laboratories. Plague preventive measures, if they are to be effective here, must be quite simple, and the plague health officer that is wanted is a man who can induce or compel the people to adopt those simple measures. In the town of Tekari, for instance, I am informed that it is difficult to make the people believe that the destruction of rats is of any use as a preventive against plague. A native of India trained at home in sanitary science would hardly be the person to stir up those people to the necessary amount of energy in this direction. It is suggested that, after plague has been stamped out, the organization might be retained as a sanitary service. I believe the proposal for a sanitary service has been before the Government of India for many years. A scheme was submitted by the Government of Bengal in 1896 as far as Bengal was concerned, but this was finally negatived by the Government of India. The grounds for and against such a service must therefore be well known to Government. It would seem advisable to keep it quite distinct from the present idea of a Plague Department.

Annexure 8.

Letter from W. A. Marr, Esq., I.C.S., District Magistrate of Shahabad, to the Commissioner of the Patna Division, Bankipore, No. 1496-*J., dated Arrah, the 4th August,* 1906.

In reply to your memorandum No. G-29/79, dated the 3rd July, 1906, on organisation of plague measures, I have the honour to forward a copy of a note on the subject by Captain A. F. Stevens, I.M.S., Civil Surgeon of the district, and to state that I agree with the views set forth in his able and suggestive note, and have really nothing to add to them.

I think it is most desirable to co-ordinate plague work under a separate organised department which should be maintained either until plague has been stamped out, or, if found practicable, merely until the people of the plague-affected areas have thoroughly learnt and adopted approved prophylactic measures.

The division of the staff into three sections is reasonable and natural, but I do not see that the members of sections need consist to any large extent of medical men. Most of the work assigned to that section could, under proper supervision, be carried out by any energetic, tactful and intelligent layman, and his services could probably be secured more cheaply.

At present I am afraid that educated Indians cannot be usefully employed to any large extent in positions of responsibility in plague and sanitary measures. Their mental attitude towards sanitation is so different from that of Saxon races that thoroughness cannot be expected from them, and thoroughness I imagine is the main thing in plague

and sanitary measures. The main bulk of the workers, in section B at least, must be Indians, but they should work at first under European or Eurasian supervision.

I think the sending of selected Indian-born Europeans, Indians and Eurasians of suitable medical qualifications to England for a course of training in laboratory work and public health is most desirable. These men would presumably imbibe to some extent the Western mental attitude towards sanitary work, and would retain on their return that spirit of thoroughness and enthusiasm which would entitle them to responsible posts in the fighting line.

I am not of opinion that any large number of medical men should be imported from England for plague work. Their ignorance of the language and the customs of the country would render them useless, except in the laboratory for the first year or two, and there would be difficulty in providing them with permanent posts after their plague work had come to a close. They would also be expensive.

I think a system by which the existing medical men in India would be used and Indian-born Europeans, Eurasians and Indians of suitable medical qualifications sent to England in yearly batches for training in laboratory work and public health and then drafted into the plague and sanitary departments would give more satisfactory results and at a smaller ultimate cost to the country, since these trained men would be a permanent acquisition.

Annexure 9.

Note by Captain A. F. Stevens, I.M.S., Officiating Civil Surgeon, Shahabad, dated Arrah, the 27th July, 1906.

I am entirely of opinion that plague-workers throughout India should be amalgamated into one corporate and co-ordinate whole under the control of one head. Much money and effort has been practically wasted by the lack of such co-ordination, besides which the general populace have no set place in the scheme, or rather lack of scheme, under which we are at present working. If a definite policy and definite methods of procedure be put before them, I am sure we will find many willing co-operators amongst them who at present are lukewarm in their endeavours to give us their aid; lukewarm simply because of the perplexity and confusion existing in their minds which has been brought about by the conflicting counsels tendered them officially and non-officially. You may ask a man to do a certain thing: he answers at once "I am willing to do so; but this is not what so-and-so says or what they do in such-and-such a district," and the aid given is only half-hearted.

Plague-workers themselves also are quite unaware of the measures undertaken by their fellow-workers in other districts or the results of such measures, except from what they gather from such disjointed smatterings as are published in the lay or medical press. The staffing of such a service, for it will have to become a practically separate Department comparable with the "Foreign Department," will of course be a matter of considerable difficulty and expense. Should physicians be imported from Europe, they will be of very little use for some time after their arrival in the country, especially in the "fighting line," on account of their ignorance of language and custom. So, if imported, their services at all events at first will be available practically only for bacteriological and laboratory work.

Natives of the country (even native gentlemen) do not view sanitation in the same light as we Europeans do, and they are not at all likely to become strenuous and efficient sanitary officials. Though of course some individuals occur to every District Officer's mind whose services would probably be very useful, but such individuals unfortunately are very few in number.

The bulk therefore of the officering of such a service must be performed by the Indian Medical Service, or by medical men with knowledge of the country, its language and customs; that is to say, if only medical men be wanted. But since the operations likely to be undertaken will be chiefly cleansing and rat-catching, is there any need that only medical men be employed on those services? The young soldier and engineer, or even the young man in search of employment, could make themselves very useful, and on the hoped-for cessation of the necessity of their employment could be returned to their own departments drafted into services for such as they have shown themselves adapted. This probation on active service might be of the greatest use to Government in helping to select active, intelligent, steady recruits for Departments for which no previous special training be required. Any of the latter class of candidates entertained should of course be of exceptional social standing, and likely to exercise good influence over their subordinates. The work they will be employed on will be one that requires great tact and delicacy on handling for the subordinate ranks, which for the most part must consist of a good class of native; room might be found for many intelligent and capable Eurasians, who I am sure would be willing to serve.

There is one point more in this connection: though the fighting and intelligence lines must consist of British subjects, I should imagine that there would be no insuperable objections to asking the aid of other interested countries in establishing bacteriological and laboratory research depôts in various parts of the country to work in connection with the above scheme. For, in waging war against plague, we are fighting not only on our own behalf or for purely British interests, but also on behalf of the whole civilised world.

I think the proposal for the division of the Department into three branches a most natural one. To aid the Intelligence Branch, trained naturalists are wanted; in this matter the Linnæan Society might be asked for advice and help. And to help in the fighting line,

I propose importation of trained rat-catchers, if none can be found in British regiments in India, and ferrets, or, better still, enquiries should be set afoot for some chemical means of destroying or stifling animals with their vermin in their holes. Owing to the great prolificity of the rat, it is uphill work trying to kill them by ordinary open-air methods. We must carry the war into their stronghold.

III (*b*) (*c*). I have practically answered these questions above.

(*b*) To repeat, very few natives of India in my opinion would make efficient Sanitary Officers. Their whole training and early surroundings and influences are against it. Some few, however, would be invaluable. More is to be expected from the European country-born and the better class Eurasian who have a much higher standard of living.

(*c*) The experiment might certainly be made of sending a selected few, both of natives and Eurasians, to Europe for bacteriological training.

I believe Burmans would show great aptitude for this work, but I think little can be expected of the less intelligent and practical races.

Annexure 10.

Letter from C. A. Bell, Esq., I.C.S., District Magistrate of Saran, to the Commissioner of the Patna Division, Bankipore. No. 1,600, *dated Chapra, the* 30*th July*, 1906.

With reference to your memorandum No. G.39/79, dated 3rd instant, asking my opinion on the points referred to in Clauses I, III (*b*) and III (*c*), paragraph 1 of the India Government letter therewith forwarded, regarding the creation of a special medical and sanitary organization for dealing with plague in selected localities, I have the honour to submit herewith copy of Civil Surgeon's opinion on the subject, and to say that I agree with it.

Annexure 11.

Letter from the Civil Surgeon of Saran, to the District Magistrate of Saran. No. 997 *dated Saran, the* 16*th July*, 1906.

In compliance with your memorandum No. 1,421, forwarding copy of a letter No. 140-T. P., from the Government of Bengal, Municipal Department, Medical (Plague) Branch, I have the honour to state—

(1) that the creation of a special medical and sanitary organization for dealing with plague will meet a long-felt want, in that it will create a special service trained to combat plague who will be able to give their whole time and attention to it.

(2) That in my opinion the duties of the Intelligence Branch and the Sanitary Branch as pointed out in sections A and B in the memorandum of the Royal College of Physicians could well be carried out by one officer having separate intelligence and sanitary staff working under him.

(3) With reference to paragraphs IV (*b*) and (*c*), I am of opinion that Assistant Surgeons, both Military and Civil, might be selected for plague service, and be granted scholarships to enable them to proceed to England and qualify themselves by a course of study for employment as Plague Health Officers of districts. These could be given charge of districts, and would perform the duties of intelligence and sanitary officers, and would be under the direction of superior officers who would be posted to divisions, and who would have at their headquarters a subordinate trained to carry out the duties of the Bacteriological Branch as pointed out in section (*c*).

Annexure 12.

Letter from R. G. Kilby, Esq., I.C.S., District Magistrate of Muzaffarpur, to the Commissioner of the Patna Division, Bankipore, No. G. 50/103–06, *dated Muzuffarpur, the* 27*th July*, 1906.

With reference to your memorandum No. G. 39/79, dated 3rd July, 1906, forwarding a copy of letter from the Government of India in the Home Department, No. 873, dated 9th May, 1906, I have the honour to forward herewith a copy of a report by the Civil Surgeon in his letter No. 567, dated 16th July, 1906. The suggestion put forward in paragraphs I and III (*b*) and (*c*) all appear perfectly practicable and most desirable.

Annexure 13.

Letter from Lt.-Col. T. Grainger, I.M.S., Civil Surgeon of Muzaffarpur, to the Magistrate of Muzaffarpur, No. 56, *dated Muzaffarpur, the* 16*th and* 17*th July*, 1906.

In reply to your No. G. 50/94–06 of the 9th July, 1906, forwarding the Government of India No. 873 of the 9th May, 1906, regarding certain proposals for the organization of

a special service for the management and prevention of plague epidemics, I have the honour to report on the various parts as follows :—

Paragraph I., *Clause* 1.—The proposal in sub-clause (*a*) is feasible. The various medical schools in the country are turning out every year a number of practitioners of the assistant-surgeon and hospital assistant classes, who, for several years after they receive their diplomas, find it very hard to make a living. From amongst these it should be possible to enlist a sufficient number of men for plague work, provided they are treated liberally in respect of pay, and a prospect is held out of subsequent employment in the Sanitary Department, or the grant of a substantial gratuity when they are no longer required for plague work.

By taking them into the plague service young they are more likely to prove energetic, and be more content to bear the hardships which are unavoidable in the work, while the holding out of such prospects as I have suggested (subject to the condition of approved service) will keep a part of them at least up to their work.

As regards female medical assistants, they would be of use for work in towns, but most of them in Bengal at least are rather bulky, and for work in rural areas they would be of little use, and be a considerable incubus.

The employment of officers of the Indian Medical Service and English physicians is merely a matter of men and money, and the provision of both is a question for the Head of the Department and the Government of India.

Sub-clause (*b*).—I do not see that any practical purpose is served by separating the Intelligence Branch from the Sanitary Branch. The Bacteriological Branch must be separate. For plague measures to be successful, the area under operation must not be too large, and I think that there would be a considerable saving without loss of efficiency if the two first branches were merged into one. If kept separate, there is likely to be a waste of labour, as from time to time either branch will have very little to do.

Paragraph I, *clause* III (*b*).—I do not think the suggested economy is to be recommended. In fact I think it would defeat its own object. If money is to be spent at all, it is worth while taking precautions to have it spent to the best advantage. This can only be secured by utilizing the energy, honesty and personal influence of the European. If anything can be argued from famine experiences, the pay for European supervision would be but a fraction of the saving resulting to Government.

In order to give plague measures the remotest chance of success, it is necessary to obtain the trust and confidence of the people. The results of not taking this into consideration when plague first broke out in India were deplorable, and have to be contended with even to the present day, over and above the natural suspicion and distrust with which every new measure, however beneficial its aim may be, is regarded. In my opinion the establishment and maintenance of this feeling of trust can only be secured by the personal influence of Europeans in charge of the work, entirely dissociated from the influence of the local executive and police.

Clause III (*e*).—The proposal contained in this clause is not quite satisfactory, and I doubt if it would be availed of to any extent by the men whom it is intended to benefit.

It would entail a considerable amount of hardship on them, as well as expense, and judging by what I have seen of Indian students in England, I doubt if the majority of them would take full advantage of the instruction offered. Besides, the course for the D.P.H. contains much that would be useless to them in the present stage of India in respect of sanitation. This would have to be learned only to be forgotten, and the time spent on it could be much more profitably spent otherwise.

Bacteriological and chemical laboratories do exist in India, and it is to be hoped that the time is not far distant when their numbers will have increased so as to bear some small proportion to the needs of the country. Regular courses could be held at these, in which instruction similar to the D. P. H. courses in England could be given, while instruction could also be given in sanitary service adapted to Indian requirements. In fact an Indian D. P. H. could be instituted, which all men desirous of becoming Medical Officers of Health, or of employment in the Sanitary Department, would be obliged to obtain. Something of this kind is required to bring medical teaching in India more in line with modern requirements, and it cannot be long before the want is supplied.

It would have the advantage of turning out as many trained men as may be required, and granting the necessity for laboratories and for facilities for the teaching of sanitary science as part of what is owed to the country, a considerable number could be trained at a smaller expense than would be incurred by sending a few men to England for that purpose.

The original papers are herewith returned.

Annexure 14.

Letter from W. Egerton, Esq., I.C.S., District Magistrate, Darbhanga, to the Commissioner of the Patna Division, No. 2191, *dated Laheria-Serai, the* 15/17*th August,* 1906.

With reference to your memorandum No. G. 39/79–06 of 1906, dated the 3rd ultimo, forwarding a copy of Government of Bengal's letter No. 140–T.P., dated the 2nd June, 1906, with enclosures, regarding a scheme formulated by the Royal College of Physicians for the creation of a special medical and sanitary organisation for dealing with plague in

selected localities, I have the honour to submit the following report on clauses I., III. (*b*), and III. (*c*) of paragraph I. of letter No. 873, dated 9th May, 1906, from the Government of India.

Clause I., 2.—The idea of having a special Plague Department, European and native, under the Government of India, with a considerable staff from which officers can be deputed to deal with local outbreaks, seems an excellent one. It is desirable that a medical man having a thorough training in Modern Bacteriology, and Epidemiology, and some knowledge of India, should be employed in every district or division (if the expense is too great otherwise) in which plague has become epidemic, for acquiring more knowledge of the disease for teaching the people; so much of what we at present know of the causes and prevention of plague and for assisting the local administration in carrying out measures for prevention. He would require competent assistants.

Clause III. (*b*), 3.—I do not understand whether it is proposed to make a new Sanitary Department with a special staff of officers selected from educated natives, or merely to utilise the service of educated natives as far as they can be obtained voluntarily for sanitary work during a plague epidemic. Educated natives who will give up their time gratis to sanitary work will not be numerous. An increase in the number of Assistant Surgeons and Hospital Assistants specially trained for sanitary work would be the easier way of getting a trained sanitary service.

Clause III. (*c*), 4.—The grant of scholarships to specially selected natives would be likely to induce some of them to go to England for a special training, if it was probable that they would get Government service in the end, but it would be possible, I think, to devise and execute a scheme for their training in India.

Annexure 15.

Letter from Colonel A. M. Crofts, C.I.E., I.M.S., Officiating Inspector-General of Civil Hospitals, Bengal, to the Secretary to the Government of Bengal, Municipal Department. No. 7350, dated Calcutta, the 29th November, 1906.

(Extract.)

With reference to your letter, No. 109 T.—P., dated the 24th May, 1906, with enclosures, I have the honour to make the following remarks:—That the Sanitary Service of India as at present constituted is altogether inadequate to meet the requirements of the country even under ordinary conditions is, I think, admitted by everyone, and this inadequacy has become even more apparent since the appearance of plague. The efforts which have been made to meet the exigencies caused by the advent of plague have been based on methods practically similar to those which are now advocated by the Royal College of Physicians in their memorandum, and their proposals, if adopted, would in the main simply amount to increasing the existing staff of the Sanitary Department, but differing in so far as this additional staff should be a separate service for the purpose of carrying out measures against plague alone, which, it is argued, would thus be more efficiently done than has hitherto been possible on account of the paucity of agents for so doing. They propose that the separate Department thus formed should be composed of officers who would be familiar with the customs and habits of the people, and the appointments in it should be filled by Indian Medical Service officers, as well as physicians sent out from England for special plague duty, who should direct and supervise a large corps of native medical persons, male and female, the Department being divided into sections A, B and C, each section having definite duties to perform. I have nothing but the heartiest commendations for the principle underlying the proposed scheme, but I would invite serious attention to the following points:—It has been tacitly assumed in the memorandum that the measures advocated to prevent the spread of plague will have the support and approval of at least a majority of the population amongst whom and for whose benefit it is proposed to carry these measures out, but if any one thing more than another has been conclusively proved by the experience hitherto gained in connection with plague measures, it is that this approval and support is, as a rule, conspicuous by its absence, and that most of those, who by birth, education, and position, may be regarded as leaders of the people, while loudly protesting their approval to the measures taken or proposed, either give them no practical support or secretly encourage opposition to their being carried out, and it is mainly on this account and on the superstitious ignorance of the people that plague continues to exist to the extent it does, and it is on these facts, borne out by the experience of past years, and on the conspicuous failure of legislative measures, introduced with a view to counteract their paralysing effect on plague measures, that the present plague policy of the Government of India is based. There is a consensus of opinion of all those who are best qualified to speak from experience that, until the habits, customs, and mode of thought of the people are changed, until they are educated in sanitary measures up to a higher standard than at present, and are prepared to voluntarily accept and actively co-operate in the carrying out of measures for staying plague, it is worse than useless to employ methods which are generally applicable to, and effective in, more civilised countries where different conditions obtain. Again it has been tacitly assumed that there will be no difficulty in obtaining a large staff of native medical assistants whom, it is proposed to form into a sanitary corps. Anyone conversant with native ideas knows how uncongenial to the educated native or to a native of any but the lowest caste, the practical work of sanitation is, especially in connection with plague or epidemic disease of any kind, and how little they can be depended on to efficiently inspect or supervise the cleaning out of filthy bazaars, latrines and drains by mehters. A native will learn the

theory and laws of sanitation, and will pass brilliant examinations thereon, but he will not assimilate them or put them into practice, as he has been taught from childhood to look upon such work as derogatory to his dignity and as lowering to his caste. The men, therefore, who might be expected to enlist in the proposed sanitary corps would be persons of the lowest caste, and supervised by the same class of native overseer, at present employed, over which constant and efficient European supervision would have to be exercised to prevent the oppression of the people and extortion which, in too many instances, is now practised. Again it has been found impossible to obtain native women to learn the work of hospital assistants, compounders, nurses, dressers and *dhais*, although inducements have been offered to them in the shape of scholarships, pay, etc., amounting in some instances to more than double the pay which they could earn under ordinary circumstances; if the inducements thus offered have failed to obtain recruits, even for instruction, how much more impossible will it be to obtain recruits for the much more uncongenial work of carrying out sanitary measures. I believe it would be impossible to do so. I do not question the ability of the educated native to become a brilliant bacteriologist. He possesses many qualities which would go far in this direction, but these are not what India wants so much at present; a few such will suffice, and these can be trained as well in the existing bacteriological laboratories in this country, which in equipment are now as good as any in England, and, being in India, offer better opportunities for the necessary instruction on diseases peculiar to this country being given. It is not by granting scholarships to natives of India to enable them to study in laboratories that the present sanitary needs of India can be met. These men will have their place after many years have passed, but their time is not yet. Laboratory experience and methods are not required for the grosser sanitary requirements of India in the way of better water supply, better drainage, better scavenging, better ventilation, and lighting in dwellings, &c., &c. Dirt and darkness are the primary factors in spreading plague; the absence of these in the environment of the field-rat is one of the chief causes of his being innocuous as a plague carrier, and the domestic rat, placed under similar sanitary conditions, would become just as innocuous. I am convinced that it is not by the formation of a separate Medical Service for the carrying out of measures against plague alone that the exigencies of the situation can be best met, not by the importation of physicians from England, ignorant of the customs and habits of the people, but by the inauguration of widespread measures, not specially against plague, but against the grosser sanitary defects now existing in every town and city in India. If public sanitation in towns and villages is improved, a standard will be gradually set up, and an improvement in private domestic hygiene will assuredly follow; the people themselves will be educated in the principles of sanitation, and will be brought to realize the advantages to be derived by accepting these principles. When this attitude of the people is attained, India will be far on the road to victory, not alone over plague, but over epidemic disease of every kind; then, and then only, will be present the two absolutely essential conditions for successfully combating plague or any epidemic disease, namely, the voluntary acceptance by the people of the measures proposed and their active co-operation and assistance in carrying out these measures; and I would submit that the experience of the past ten years has conclusively proved that the absence of this voluntary acceptance by, and assistance of, the people would render ineffectual the efforts of a battalion of sanitary experts and an army corps of assistants, and that the acceptance of and putting into practice the proposals contained in the memorandum under notice would be like trying to teach a child to run before he is able to walk, and would be doomed to failure. With all due respect to the Royal College of Physicians, it is only fair to assume that the proposals were made in ignorance of local conditions and of the habits and customs of the people of India. The increasing scarcity of labourers and recruits for the army is dwelt on in paragraph 6 as one of the reasons showing the necessity for the organization of the sanitary corps. Labourers and recruits are drawn from the inhabitants of country districts, and ignorance of the structural conditions of the huts of this class can alone have led to the proposal contained in Section B (1) of the memorandum. An ignorance similar to that which led a distinguished medical authority in England to assert some years ago that half the diseases in India might be abolished by putting up iron boilers in every village and making them the sole source of the water-supply.

Enclosure 7 in No. 2.

Letter from E. F. L. Winter, Esq., Secretary to Government, United Provinces, to the Secretary to the Government of India, Home Department, Sanitary (Plague). No. 287 of 1906, *dated Naini Tal, the 3rd October*, 1906.

(Extract).

In reply to Mr. Fergusson's letter, No. 874, dated the 9th May, 1906, I am directed to enclose a copy of a letter, No. G-1067 C.O., dated 3rd September, 1906, from the Inspector-General of civil hospitals which details the organization employed in this province for combating plague. With refence to clause 1 of the letter under reply, I am to say that the Lieutenant-Governor would deprecate the employment of any special staff to detect the first cases of plague. The

experience gained in this province is that any such staff would defeat the object with which it was created: it would be viewed with distrust and lead to the concealment of the earlier plague cases, which was so common during the first years of the epidemic, and which it has been the constant endeavour of this Government to counteract. Any inquiries into the circumstances of every case of plague and the method by which the house was infected would be strongly resented, especially if the inquiry were made by persons who were strangers to the people and in whom they had not full confidence. Such inquiry would result in the concealment of plague cases, in the removal of patients, and the spread of the infection. The importance of vigorous action on the occurrence of the first cases has been fully recognised by this Government and has been impressed on all officers, both medical and executive, but at the same time it has been realised that reliance must be placed on the people themselves to report the first cases. When a town is attacked for the first time, the earlier cases will always be concealed. The people, however, learn by experience the danger incurred by concealment and the advantages of prompt action, and when a town is attacked for a third or fourth time, the earlier cases are, it is believed, promptly reported, the houses are vacated, and disinfection is applied for. As showing the importance now attached by the people to early action, it may be mentioned that the destruction of rats has been frequently objected to on the ground that they give warning of a house having became infected; in the absence of rats there would be no such warning. There is therefore no necessity for, and, indeed, there are weighty objections against, the employment of a special staff as intelligence officers. The existing organization in towns is sufficient, and in villages no organization of the kind would be practicable. With regard to the proposed sanitary branch to work at practical measures on the scene of the outbreak, I am to say that in this province operations of this kind are undertaken by the civil surgeon and in the larger towns by special health officers with trained medical subordinates when needed. In the Lieutenant-Governor's opinion it is essential that these establishments should be under the control of the civil surgeons. Success will never follow in the wake of operations for stamping out the disease unless the confidence of the people is gained, and medical officers imported from Europe, ignorant of the customs and language of the people, will not gain their confidence. His Honour therefore does not recommend the introduction of medical men from England, nor the multiplication of medical subordinates It is not difficult to train non-medical men in the work of disinfection, and the people prefer the work to be done by people that they know. It is not possible to compulsorily disinfect every house in an infected area; it has therefore been the object of this Government to induce people to disinfect their houses themselves or to apply for disinfection. No remedy for the disease has been discovered. Prevention is mainly a matter of sanitation, and in this province more money could usefully be employed on the sanitation of towns. His Honour sees no object in the creation of a separate staff for bacteriological purposes, but it would obviously be an advantage to encourage civil surgeons and their assistants to undertake microscopic experiments and minor bacteriological work. Money would be well spent in supplying them with the necessary facilities. His Honour would not, therefore, for the reasons given in the preceding paragraphs, recommend the creation of a special medical and sanitary organisation on the lines proposed by the Royal College of Physicians. With regard to clause III. (*b*) of Mr. Fergusson's letter, I am to say that the Lieutenant-Governor thinks that sanitary and medical work offers a singularly congenial career to the educated natives of the country, and that they are well adapted to work of the kind, but at present the means of training them are limited; there is work for far more than can be trained at existing institutions. This difficulty will be met by the establishment of the Medical College at Lucknow. His Honour also entirely approves of the proposal to grant scholarships to natives of India who have sufficient medical training to enable them to go to England to be trained in bacteriological laboratories and also more particularly to be trained in sanitary work for employment as health officers.

Annexure.

Letter from Colonel R. D. Murray, I.M.S., Inspector-General of Civil Hospitals, United Provinces, to Secretary to Government, United Provinces, No. G.-1067C.O., dated Naini Tal, the 3rd September, 1906.

With reference to clauses I, III (*b*), and III (*c*) of paragraph I of the Government of India's letter received with G. O. No. 166/XVI-903B, Sanitation Department, dated the 24th May, 1906, I have the honour to report as follows.

2. The existing medical staff for dealing with plague in these provinces is as follows. The Inspector-General of civil hospitals, with the Chief Plague Officer as his personal assistant, is in charge of all plague operations, and has as his staff all the civil surgeons of the different districts. In places which are badly infected, or in towns which, from their size or for other reasons, are more important, native assistant surgeons are deputed as special health officers to assist the civil surgeons, and elsewhere hospital assistants and native doctors are appointed whenever required. These assistant surgeons, hospital assistants, and native doctors are, as far as possible, kept on duty all the year round, even though there be no plague, so that they may keep in touch with, and have the confidence of, the people. The names of others are kept in special registers and appointed, when available, year after year, so that all have now become to a considerable extent specially trained in the work.

Bacteriological diagnoses and investigations are performed at the Government laboratories in Agra.

3. The above arrangements differ from those suggested in clause I. of the above-quoted letter only in the following points :—

(*a*) it is not a special staff whose sole work is connected with plague, and

(*b*) it is not divided into different sections—intelligence, sanitary, and bacteriological.

These two points are much interwoven and cannot be wholly dissociated, but in discussing them it is convenient to consider (*b*) first—the division of the staff into special sections, each having its own branch of work. Such a division from a scientific point of view would be in many ways very desirable and would, were the epidemic in England, be quite practicable. It is not a division, however, which (with the exception of bacteriology—and this is referred to more fully below) is essential to the study of the disease, and it would necessitate a very large increase in staff as much of the work of different sections would overlap. The chief objection, however, would be the multiplication of special officers, and this leads us to (*a*).

In India since the first outbreak of plague the great difficulty and chief obstacle to progress both in gaining knowledge of the disease and in applying that knowledge practically has been the distrust and suspicion of the people with whom we have to deal. Only now is that distrust and suspicion of our motives beginning to be allayed, and this I attribute greatly to the fact that plague operations are undertaken by the civil surgeon, an officer who is in the district all the year round and who is in constant touch with the people. The special officer has the advantage of the civil surgeon in being able to devote the whole of his attention to the one object and in his previous and wider experience, but he comes as an unknown quantity. The mere name of plague officer is at present sufficient to ensure his being regarded with distrust, and be he ever so tactful, much of his work must be nullified by his not having the confidence of the people. I am sure that at present much more progress will be made by working through the civil surgeons.

4. With reference to the bacteriological work connected with the epidemics, there are special difficulties in carrying out this locally, the chief of which are the great expense that would be involved in the equipment and moving of laboratories and the difficulty of obtaining suitable men. A considerable advance could, however, I think, be made on lines parallel to those suggested by the provision to all civil surgeons of a full equipment for microscopical and minor bacteriological work. Complete bacteriological investigations must always be relegated to specialists in fully equipped laboratories.

5. With reference to III (*b*), regarding utilisation of educated natives. This is at present being done in these provinces so far as assistant surgeons, hospital assistants, and native doctors are concerned. Were a sufficient number of these classes not available, other educated natives would be employed.

6. With reference to III (*c*), regarding grant of scholarships, I consider that the extension of this procedure would be very desirable, as were such granted for good plague work, not only would it serve to procure a better class of men, but it would insure their giving their very best work. Plague prevention is now recognised as largely a matter of sanitation, and in this special branch a training in England is very valuable, and a class of natives with such training would be a valuable asset to Government as special health officers.

Enclosure 8 in No. 2.

Letter from A. B. Kettlewell, Esq., Secretary to Government, Punjab, and its Dependencies, to the Secretary to the Government of India, Home Department, No. 883 S, dated Simla, 7th July, 1906.

(Extract.)

I am directed to acknowledge the receipt of Mr. Fergusson's letter No. 875, dated the 9th May, 1906. requesting an expression of the Lieutenant-Governor's opinion on the practicability of the scheme formulated by the Royal College of Physicians for the creation of a medical and sanitary organisation for dealing with plague in selected places, and also on the suggestion to utilise the services of educated natives of India in connection therewith. In reply, I am directed to forward a copy of a letter, No. 99 S., dated the 14th June, 1906, from the Inspector-General of Civil Hospitals, Punjab, and to say that the Lieutenant-Governor entirely agrees in the views expressed by that officer on the points referred for consideration. Sir Charles Rivaz thinks that the memorandum submitted by the Royal College of Physicians must have been written under some misapprehension of the actual conditions under which the work of dealing with plague is carried on in India. It would seem to assume that no special organization for dealing with plague exists, and that Government is not in a position to adopt "those measures which have elsewhere been found useful in coping with the disease." As the Government of India are aware, this is far from being a correct exposition of the situation. Not only has a special organization for coping with the epidemic been in existence for some considerable period, but, further, that organization has been mainly employed both on the remedial measures which local and outside experience has endorsed from time to time as being effective, and also on scientific investigations of the nature suggested in the memorandum. It is no doubt a fact that the efforts of Government have to a considerable extent been hampered by inadequacy of staff, but it is also none the less true that, so far as the subordinate agency is concerned, all available sources of supply have been tapped, and that the suggestions put forward by the College of Physicians offer no practical solution of the main difficulty which confronts Government at every turn. The proposal to create a special staff of male and female native medical assistants is suitable enough, but it merely represents the system on which this Government has been trying to work for a long time past, and which has only met with partial success owing to the simple fact that the supply of medical assistants turned out by our colleges is unequal to the demand. Of two suggestions advanced for meeting this difficulty, viz., the recruitment of physicians in England and the grant of scholarships to natives of India—the former has been tried and has proved unsatisfactory, while the latter would supply us with a class of man whose English experience would offer no real guarantee of his fitness for the practical administration of plague measures in India. In the matter of utilising educated natives in a sanitary and plague service, the Lieutenant-Governor understands that what is meant is not the mere enlistment of educated persons in the work of plague administration, but the creation of a special service of *medically*-trained Government servants who have made sanitary science their special study. Here again the same difficulty recurs; for the supply of medically-trained natives is—owing to the exigencies created by plague—far below the demand, and it will probably be impossible in any reasonable period of time to create a body of servants of this class. The Inspector-General of Civil Hospitals has given good reasons in paragraphs 6 and 7 of his letter for rejecting the proposals to divide the special plague organization into sections, and His Honour has nothing to add to his remarks on the subject.

Annexure.

Letter from Colonel T. E. L. Bate, C.I.E., I.M.S., Inspector-General of Civil Hospitals, Punjab, to the Secretary to Government, Punjab, No. 99 S., dated the 14th June, 1906.

(Extract.)

With reference to your endorsement No. 246 S., dated 30th May, 1906, forwarding the letter of the Government of India, Home Department, No. 875, dated 9th May, 1906, I

have the honour to submit the following opinion and report. *Clause I (a) of above-quoted letter—The creation of a special medical and sanitary organization.*—All that need be said on this point is that such an organization is in existence; but as the suggestion of creation implies that there is none, it may perhaps be well to give a sketch of our present arrangements. The plague medical staff works under the control of a special head-quarters department, including the Inspector-General of Civil Hospitals and his Assistant, the Chief Plague Medical Officer of the Province. In each district, of which there are 29, the Civil Surgeon is *ex-officio* the District Plague Medical Officer; and he is responsible for the direction of plague operations within his jurisdiction. Under the District Plague Medical Officers are a number of Assistant Plague Medical Officers, including Indian Medical Service Officers and Doctors specially imported from England, who are assisted by Native Assistant Surgeons holding Indian or home diplomas, Native Hospital Assistants, Dispensers, trained disinfectors, &c. The strength of the superior staff on the 1st May last was—Indian Medical Service Officers 10, specially imported officers 4, Assistant Surgeons 23 and Hospital Assistants 38. When the enormous area of infection is considered, we cannot pretend that the above staff is an adequate one, but we can say that we are utilizing every available trained medical man; unfortunately, the supply is not equal to the demand. In the case of officers of the Indian Medical Service, we asked for 20, and we have been supplied with all that can be spared, 9 in number. With regard to the importing of physicians from home, we have had a large experience; the system has proved unsatisfactory and cannot be recommended. The employment offered is temporary with no future prospects, and consequently the best class of men is not attracted; and even the good men who come are practically useless for a considerable time, until they get sufficient acquaintance with the language and customs of the people. And by the time they become of use they return to England in search of permanent employment. The system would only become a satisfactory one if permanent employment were offered, with prospects of advancement and pension, which would be equivalent to increasing the cadre of the Indian Medical Service. And I may add that, in my opinion, this is the best solution of the difficulty. Native medical practitioners have been utilized to the utmost extent of the supply: we have not only obtained every man we can in this Province, but we have also engaged as many as we could from other Provinces; the latter have not as a rule proved suitable. I have perhaps said enough to show that our plague medical staff is as large as it can possibly be made in existing circumstances. It is principally in the number of European Officers, versed in the language and customs of the people, that augmentation is required; we especially need more Indian Medical Service Officers who know the people, their language and their customs. They are, moreover, stimulated in the discharge of their duties by the knowledge that their efforts will certainly affect their future career in the service. With hardly an exception the officers deputed to this Province have worked with admirable zeal and judgment; and the work entrusted to them has been invariably well done. *Clause I (b)—The medical organization having been created, it is suggested that it should be divided into three branches, intelligence, sanitary and bacteriological.*—Under the conditions in existence, I do not consider that there is anything to be gained by a separation of the medical staff into intelligence and sanitary branches; on the contrary, I think that the combination of the two is essentially practical and obvious. It seems that there is nothing to be gained by one Medical Officer being specially detailed to obtain information and another to act on it. Our medical staff discovering the facts for themselves proceed at once to act; and I maintain that this is conducive not only to economy in personnel but to efficiency. The reporting of information from Assistant to District Plague Medical Officer and again from District Plague Medical Officer to Chief Plague Medical Officer and the issue of general and special instructions in the same channel is well calculated to obtain as uniform and effective action as is possible. With regard to the suggestion of a bacteriological branch whose sphere would either be confined to research pure and simple—and on this I am not required to express an opinion—or to observations carried on with a view to directly influencing practical action. The latter I consider to be an impracticable ideal. I may, perhaps, take as an instance the systematic examination of rats in the "free" season. Now, in the village Kasel, which was pointed out by us to the Plague Commission for purposes of investigation as a place where plague infection was supposed to be endemic, very complete arrangements were made for the daily systematic examination of rats; and, although I am not in possession of any official information, I believe it to be true that the examination went on for some weeks before infection was discovered. It is, therefore, I think, impossible to contemplate any such action in any large number of towns and villages. In my opinion a Medical Officer would be much more profitably engaged in attacking with the means at our disposal places which have been marked down as probable centres of endemic plague, with a view to preventing a recrudescence, than in sitting down with a microscope in one place for a couple of months in order to definitely find out whether infection is present or not. *Clause III (b)—The utilization of educated natives for plague work.*—I have already pointed out that, as far as the supply goes, the medically educated native is utilized for work in plague infected areas. With regard to native laymen, I may say that a most important part of our work is the education of the people in those measures for the prevention and suppression of plague which they can actually carry out themselves. Leaflets embodying short and simple instructions have been distributed to all villages; placards are hung up in all dispensaries, committee rooms, tahsil head-quarters and other important places; pamphlets have been distributed to all schools; and, finally, we have the teaching of the touring medical staff. There is, I think, room for more definite steps in this direction, and the natural leaders of the people could be specially instructed in the method of carrying out ordinary anti-plague measures so as to become most useful auxiliaries in campaigns against the disease. *Clause III (c)—The grant of*

scholarships to medically trained natives for a course of study in England.—In my opinion the school of practical experience in this country under Medical Officers expert in plague politics is the best, indeed the only one, for educating the medically trained native in the duties of a plague health officer.

Enclosure 9 in No. 2.

Letter from W. F. Rice, Esq., I.C.S., Secretary to the Government of Burma, to the Secretary to the Government of India, Home Department, No. 773, dated Rangoon, the 21st September, 1906.

(Extract.)

I am directed to acknowledge the receipt of your letter, No. 876 (Sanitary Plague), dated the 9th May, 1906, forwarding a copy of a Despatch from His Majesty's Secretary of State for India, No. 138 (Revenue), dated the 18th August, 1905, on the subject of a Memorandum on Plague submitted to him by the Royal College of Physicians. With regard to the points referred to in clauses I, III (*b*), and III (*c*) of the first paragraph of your letter under reply, I am to submit for the information of the Government of India a copy of a letter, No. 250-C., dated the 1st August, 1906, from the Sanitary Commissioner on the subject. The Lieutenant-Governor concurs in the opinion expressed by Colonel King that in this Province a special medical and sanitary department to deal with plague only is not required. Such an organisation would, in the Lieutenant-Governor's opinion, be apt to give rise to inconvenience in respect to its relation to the provincial, medical, and sanitary establishments which are already in existence. These establishments, as explained by Colonel King, already perform the duties in connection with plague which the Royal College of Physicians propose to allot to Sections A, B, and C of the special Medical Department suggested by them. The system of dealing with plague in this province, which is embodied in the rules now submitted, and which is carried out in practice, includes among the means of guarding against an outbreak of plague measures designed to ensure the receipt of the earliest possible information of cases of plague or suspected plague in human beings and in animals, and provides also for inquiry into the circumstances under which infection occurs, and for the prompt report to and record by the central sanitary authority of the information so obtained. The immediate disinfection of all infected houses and their contents, as well as of other houses in the neighbourhood, in the most effective manner possible in the circumstances which prevail, is provided for, while the regular and systematic destruction of rats is prescribed as one of the most effective measures for preventing the spread of the disease. The method of disinfection which has, on the advice of the Sanitary Commissioner been approved by the local Government is shown in Appendix II.* attached to the rules which accompany this letter. The Lieutenant-Governor shares the doubt expressed by Colonel King, whether, having regard to the nature of the houses occupied by the majority of the people of this province, any fumigating apparatus such as that described in paragraph 7 of the Memorandum would be effective. The measure of rat-destruction is not one in which active co-operation can be expected from persons professing the Buddhist religion, and in some places the results obtained have been somewhat disappointing. No active hostility, however, is displayed by the people, and large quantities of rats have been and are being continually destroyed. So far as the Lieutenant-Governor is aware, the arrangements provided for the diagnosis of doubtful cases and for the bacteriological examination of rats and other subjects, which are described in the Sanitary Commissioner's letter, are adequate. The Lieutenant-Governor is disposed to think that, so far as this Province is concerned, the medical staff, reinforced as it has been on account of plague, is sufficient. He doubts whether it is necessary to grant special scholarships to qualified natives of the Province to enable them to proceed to England for further study in order to fit them for employment as plague health officers. Such persons in Burma would in any case be hard to find. The greatest hindrance which is experienced is that to which attention is drawn by Colonel King, namely, the absence of a qualified subordinate sanitary establishment. The

* Not printed.

Lieutenant-Governor has accordingly welcomed a suggestion from the Sanitary Commissioner to submit proposals for the creation of a Provincial service of trained Sanitary Inspectors. The proposals have not yet reached the local Government in a concrete form, but His Honour hopes to be in a position to submit them to the Government of India without much delay. Should the proposals meet with approval, these Sanitary Inspectors would be subordinate to the Civil Surgeons and Health Officers who are included in the regular Provincial and Municipal establishments, and would deal with all matters connected with sanitation including the prevention and suppression of plague. In the meantime, a course of instruction for the training of natives of the Province to be employed temporarily as Inspectors in connection with plague measures has been instituted in Rangoon, in order that qualified men may be available for employment on plague duty in any town or district as soon as the necessity arises. The Lieutenant-Governor is inclined to think that action on these lines is sufficient. To this extent His Honour fully concurs in the advice of the Royal College of Physicians that the services of educated natives should be utilized in a sanitary service for work in plague-infected areas.

Annexure.

Letter from Colonel W. G. King, M.B., C.I.E., I.M.S., Sanitary Commissioner, Burma, to the Secretary to the Government of Burma, No. 250 C, dated the 1st August, 1906.

With reference to your letter No. 150, dated the 6th June, in which you require me to report on certain specified points contained in Mr. Ferguson's letter No. 876, dated 9th May, I have the honour to state, in regard to the suggestions conveyed in paragraph I (*a*) of that letter that I do not see, on referring to paragraph 7 of the Royal College of Physicians' Memorandum on plague, that any arrangements other than those now in force are advised. For example, in regard to the duties of Section A of the proposed staff; at the present moment, orders exist throughout the Province which secure (i) that telegraphic information shall be given to the Sanitary Commissioner as to all imported, and the first three cases of indigenous or suspected, plague, in human beings or animals. In respect to such cases, (ii) standard forms requiring all details as to history of origin, attending circumstances, and sanitary treatment are supplied by medical officers of districts, and when it is found by me on perusal of these reports that the information furnished is faulty, or that neglect by any authority has occurred, the attention of officers responsible is at once directed to it. Lastly, (iii) these reports are maintained on record, and are therefore available for epidemiological comparisons.

2. As regards the duties required of Section B of the proposed staff, I would state that houses in which infected rats occur are always treated as infected.

3. As to the suggestion that disinfection should take the form of fumigation, whilst I am prepared, in accord with the general advance of knowledge of new methods, to adopt this or any other effective system, I am at present certain that for treatment of Burmese houses any known method would be impracticable. If any improvement upon the chemical fluids now employed is to be hoped for, I think the direction would (in India at least, where houses are more suitable) take the direction of "direct flaming." This method I reported on in 1898, and in 1905, with an improved apparatus, the results were shown to be absolute by Captain Christophers, I.M.S., Madras.

4. As to not keeping the people out of their houses more than six or eight hours, this is aimed at, if the neighbourhood in not rat-infected. In the latter case disinfected houses are protected from re-infection by rats by use of tar and sulphuric acid mixture.

5. As a fact, throughout the province, rats are destroyed by regular and systematic methods, as far as the prejudices of Buddhists will allow. In the plague infected centres of Rangoon and Mandalay not less than 5 per cent. of rats are examined as to infection, and when intermission occurred in Mandalay, examination has been adhered to notwithstanding absence of plague in man.

6. Administrative methods, as far as fall within the functions of the Indian Medical Service, are daily attended to. Prophylactic inoculation and sanitary preparation of towns are systematically attended to.

7. All medical officers of districts in Burma are furnished with microscopes, and if the microscopical characteristics and history do not suffice for diagnosis, standing orders exist for the forwarding of specimens to the Government bacteriologist.

8. Whilst, then, I do not think that the Committee has pointed out any new lines upon which action can be taken, I am not prepared to say that, if the staff at my disposal were increased, it will not enable such action to be much more effective. The superior staff of medical officers of the Indian Medical Service certainly requires strengthening to meet the demands upon their services on account of plague. To bring this about, all I think that is necessary is that to Local Governments should be given the right to import and dispense with medical men from England or elsewhere for temporary employment, without its being necessary that such matters be referred either to the Government of India or to the Secretary

of State—more especially should Local Governments have the right to expand temporarily their bacteriological enquiries, without sanction of the Government of India and the Secretary of State.

9. I would, therefore, adopt the recommendations of the Committee in so far as strengthening and developing the existing arrangements are concerned; but would not form a *special department*, as I believe it would practically be powerless, and, if it were not so, might well lead to the faulty political policy which was the outcome of advice tendered by imported experts when plague first reached India. Further, the Sanitary Commissioner should possess an office staff such as would enable him to deal with the very wide range of subjects and compilation of records that are really requisite.

10. But no amount of administrative skill is of the slightest avail as to plague, until there is at disposal of those responsible, firstly, legislation that will adopt unreservedly, within limits of possible political trouble, obvious sanitary dictates, and, secondly, a large number of well-educated and scientifically trained sanitary inspectors as the executive backbone of organization. Until such men are obtainable, and it is possible to post them, from a standing reserve, without a moment's delay in positions wherever desired by the Sanitary Commissioner without encountering a debate with local authorities as a preliminary, not only to plague infected localities, but to all threatened localities, would it be possible to possess an organization otherwise than *pour rire*. The Government of Burma has already assented to the principle that this invaluable class of executive officers should be produced as quickly as feasible.

11. In regard to III (*b*) and III (*c*) of Mr. Ferguson's letter, I fully agree with the principles enunciated, which are but the corollary of the first steps of employing trained sanitary inspectors and reasonable legislation. In my opinion, in each district there should be at the disposal of the civil surgeon an assistant surgeon, exclusively for sanitary and vaccination work, irrespective of one for medical work. Although I should be glad to see a scholarship available for education of selected native medical men in Europe, I think there is no reason to consider that ordinarily a sanitary assistant surgeon should be sent to Europe for this training. As already stated, a course for certificated sanitary inspectors should be shortly available in this country, which assistant surgeons should attend as a post-graduate course in hygiene; and to complete their education in bacteriology and minor sanitary engineering it would be an easy matter for the Government of Burma to make arrangements for the training of their assistant surgeons in bacteriology and minor sanitary engineering in Madras, where these courses are already given to sanitary assistant surgeons of districts at the "King Institute." Why I consider it is not necessary to look to Great Britain for training, except when an expert may be expected to be evolved, is that the type of officer required for assistant to the civil surgeon in health matters is not one who would be able to settle by obstruse investigation a leading matter on public health, but who would have such complete training that facts could readily be observed and specimens for bacteriological and parasitological research could be collected and sought for in a sound and practical manner under the particular direction of civil surgeons and bacteriologists at distinct centres, which in a country with fairly developed communications need not be numerous.

Enclosure 10 in No. 2.

Letter from L. J. Kershaw, Esq., I.C.S., Financial Secretary to Government of Eastern Bengal and Assam, Municipal Department, to the Secretary to the Government of India, Home Department, No. 7708-F, dated Shillong, the 28th July, 1906.

(Extract.)

I am directed to acknowledge the receipt of Mr. Fergusson's letter No. 877, dated the 9th May, 1906, asking for the views of the Lieutenant-Governor on a scheme formulated by the Royal College of Physicians for the creation of a special medical and sanitary organisation for dealing with plague. In reply, I am to submit, for the information of the Government of India copies of the communications noted in the margin, and to say that this province has fortunately yielded practically no opportunities of gaining plague experience, and that the Lieutenant-Governor feels much hesitation in advancing an opinion on the questions that are raised. Of one thing there appears to be no question —that no pains or expenditure should be grudged in the endeavour to ascertain the facts upon which depend the continuance and transmission of the disease. It hardly appears, however, that for this purpose it would be necessary to establish centres of research in several localities. It is, of course, not essential that the scientists who are engaged in

(1.) Letter No. 2061, dated the 25th June, 1906, from the Sanitary Commissioner, Eastern Bengal and Assam.

(2.) Letter No. 3747, dated the 26th June, 1906, from the Inspector-General of Civil Hospitals, Eastern Bengal and Assam.

this inquiry should have much special Indian experience, and it is believed that the Government have already recognised the desirability of enlisting in the investigation the best talents that are procurable in any country. But for carrying into effect preventive measures which science recommends, local influence and authority are needed as well as some knowledge of the country and people, and it seems doubtful whether success would be approached more nearly than at present by the employment of a novel form of departmental agency. It does not appear that an executive staff employed for the prevention of plague need be endowed with much scientific knowledge, for its duties would, after all, mainly consist in carrying certain rules into effect. Such a staff would, of course, consist very largely of Indians, and it would probably be within the power of the Government of this country to organize local agencies which would carry out pretty effectually the mandates of science if only the Government and the people could be assured that the mandates were final and rested upon exact knowledge.

Annexure 1.

Letter from Major E. C. Hare, I.M.S., Sanitary Commissioner, Eastern Bengal and Assam, to the Secretary to the Government of Eastern Bengal and Assam, General Department, No. 2061, *dated Shillong, the* 25*th June,* 1906.

In reply to your letter No. 6650-51 J., dated the 14th June, 1906, with enclosures, asking me to report on the scheme outlined by the Royal College of Physicians for dealing with the plague, I have the honour to say—

1. That in suggesting that officers of the Indian Medical Service and "Physicians brought out from England," should form a special corps for dealing with the epidemic, the committee appear to have overlooked the fact that no scheme can be of any practical value unless it makes use of the District Officer, who has been trained in the country and is experienced in the ways and habits of the people.

In India no compulsory measures are possible, and the District Officer, as the representative of Government is the only person who has any prestige or authority, and every detail of the operations must be carried out under his direction, if there is to be a chance of success.

2. With regard to the suggestions of the committee in clause III (*b*) and (*c*) that the services of educated native Medical Officers should be utilised to obviate the expense of increasing the cadre of the Indian Medical Service, or of specially importing physicians from England, I consider that Medical Officers of the Civil or Military Assistant Surgeon class might with advantage be utilized to act as Medical advisers. Previous special training in the habits of micro-organisms, and in the methods of dealing with them would, however, be necessary, and if such a course of training could not be found in India it would be necessary to send them to England. I think, however, that training in India would be a great advantage, because it would not only obviate delay and expense, but teaching would be given them by men who had both a practical and a laboratory knowledge of the conditions of bacterial life in the Tropics.

3. It must, I think, be admitted that our theoretical knowledge of plague at the present time is much in advance of our power of applying that knowledge, and that our present methods of dealing with the epidemic might be improved upon; but I doubt if the scheme proposed by the Royal College of Physicians would be more successful than any other of the proposals which have hitherto been suggested.

Annexure 2.

Letter from Colonel David Wilkie, M.B., I.M.S., Inspector-General of Civil Hospitals, Eastern Bengal and Assam, to the Secretary to the Government of Eastern Bengal and Assam, General Department, No. 3747, *dated Shillong, the* 26*th June,* 1906.

In reply to your letter No. 6650-51 J., dated the 14th June, 1906, I have the honour to advise as follows :—

2. The scheme reads well as a whole, but promises to be very expensive.

3. As to I (*a*) I make the following remarks. From the data given it is not possible to say whether the Government of India will be able to afford the required number of Indian Medical Service officers. The "physicians brought out from England" for the special Punjab campaign which ended so dramatically in the disaster of Mulkowal were not all, I understand, of a desirable stamp. Even at great expense it will therefore probably be difficult to get men perfectly suitable in conduct and professional efficiency; and when they have been obtained, they will at first be useless for their special purpose, because quite ignorant of India and of the languages, ways, feelings, and modes of thought of the people of India, without the advantage of the gradual breaking in which members of the services have undergone. This will hamper their dealings also with the

"large staff of male and female native medical assistants," who have their own idiosyncrasies of feeling and their own ideas of what is due to them. Such of these native medical assistants as are not in the regular Government service will expect high pay for unusually hard and dangerous work; and Government is not likely to have a large number of its own men to spare. If it enlarges its cadres permanently for the purpose, the result will be great expense. No details are given as to the nature of the special headquarters department. But care should be taken that no man from England with an axe of his own to grind shall attain in India, or in a province, a position in any way independent of, or other than subordinate to, the Sanitary Commissioner with the Government of India, or of the province.

4. The division of work proposed in I (*b*) seems to be admirable.

5. I support "the utilization of educated natives of India in a sanitary service," as suggested in III (*b*). But I doubt whether educated natives of India other than medical men would be forthcoming in sufficient numbers for plague work, even if well paid. They fear the disease too much. Nor would the native private practitioner be very anxious to join; and if he did, he would, as I have said, expect very high pay. The cadres of assistant surgeons and hospital assistants might be expanded to the necessary extent, if Government can see its way to assume the burden of the expense. This again would probably necessitate some addition to the numbers of the Indian Medical Service. A regular corps of trained menials would be another necessary part of the scheme. But the matter is one for the Sanitary Commissioner with the Government of India to work out.

6. I think, as regards III (*c*), that the bulk of the men should be trained in India both as to town and village sanitation and as to laboratory work. Scholarships in India would only be required for men that were not already medical men and employés of Government. But I contemplate, by preference, a sanitary service of which the two middle grades shall be assistant surgeons and hospital assistants. Deputation to England, or any other country offering the necessary facilities, at Government expense or with a scholarship, might, with rare exceptions, be confined to picked members of these two corps, who have shown special aptitude for the work, are likely to profit by work abroad, and are suitable for promotion beyond the common.

Enclosure 11 in No. 2.

Letter from W. N. Maw, Esq., I.C.S., Second Secretary to the Chief Commissioner, Central Provinces, to the Secretary to the Government of India, Home Department, No. 601/VI—25-1, dated Nagpur, the 17th September, 1906.

(Extract.)

I am directed to acknowledge the receipt of Mr. Fergusson's letter, No. 878, dated the 9th May, 1906, and of its enclosures, on the subject of a scheme formulated by the Royal College of Physicians, for the creation of a special medical and sanitary organisation for dealing with plague in selected localities. After consulting those local officers in the Provinces who have had most experience in dealing with plague epidemics, the Chief Commissioner desires me to submit the following reply to the points raised by the Government of India. The opinions submitted by local officers on the proposals formulated in paragraph 7 of the memorandum of the Royal College of Physicians, are unanimously adverse to the scheme. It is urged that its feasibility depends on the existence of a sympathy and good-will on the part of the native community which cannot be taken for granted, and for which it is hardly possible even to hope; that the work of preventing and combating an outbreak of plague is essentially of an executive nature, needing no special skill nor scientific knowledge, and that it can only be entrusted to the ordinary executive staff; and that physicians freshly arrived from England, and unacquainted with the language, customs, and prejudices of the people, would be unable to achieve any practical results so far as the executive side of the scheme is concerned. Mr. Craddock, Commissioner of Nagpur, who has had special experience in dealing with plague, considers that it is impossible to work on other lines than those on which the present policy of Government is laid. He points out that of the two aspects of plague work, viz., scientific investigation and executive prevention, the former is capable of expansion and can—and indeed must—be entrusted to a special staff; but that the real problem for solution in connection with the latter is the general improvement of sanitary conditions throughout the country, and that this is a task which cannot be

carried through precipitately, but must proceed gradually, hand in hand with the advance of popular enlightenment and education. If reform is needed, it lies in the improvement and strengthening of the existing executive staff, who from their experience and local knowledge are best qualified to cope with the special difficulties of the situation, rather than in the adoption of such a scheme as that suggested by the Royal College of Physicians. With the views expressed above the Chief Commissioner is in substantial agreement. He considers that the appointment of the special staff suggested would be apt to arouse alarm and suspicion, and that its efforts would meet with opposition instead of sympathy. He would accordingly deprecate the introduction of any scheme on the lines of that formulated in the memorandum. The Chief Commissioner finds somewhat more difficulty in dealing with the suggestion made in paragraphs 1 (iii) (*b*) of Mr. Fergusson's letter for the utilization of the native of India in a sanitary service for work in plague-infected areas in India. From the theoretical point of view the organization of such a service, not merely for work in connection with plague but for general sanitary work, has much to commend it, and the opinions received have not on the whole been adverse to the proposal. Consistently, however, with the views already expressed, the Chief Commissioner is unable to hold that the improvement of sanitary conditions can be entrusted to any but executive officers. The country is not, in Mr. Ismay's opinion, ripe for a sanitary service, the members of which, working in the villages without the support of any executive officers, would in all probability fail to make any impression on the sanitary conditions already prevailing, and would merely be a constant source of discontent. Their measures would be opposed by the people, and the friction which would arise would effectually prevent the accomplishment of any really good or useful work. As regards the suggestion made in paragraph 1 (iii) (*c*) of Mr. Fergusson's letter for the grant of scholarships to natives of India to enable them to proceed to England and fit themselves for employment as plague health officers, if it be decided that a special sanitary service is impracticable, the object of these scholarships disappears. If on the other hand the object of the scholarships were to improve the existing medical service, much might be said in favour of the proposal. Even then, however, Mr. Ismay would be inclined to hold that the improvement contemplated could be more easily and more economically secured by making arrangements for improved facilities in India for medical and sanitary instruction.

Enclosure 12 in No. 2.

Letter from the Honourable Mr. S. M. Fraser, C.I.E., Resident in Mysore, to the Secretary to the Government of India, Home Department. No. 950-P, Enclosure 2, dated Bangalore, the 28th August, 1906.

(Extract.)

I have the honour to acknowledge the receipt of Mr. Fergusson's letter, No. 889, dated the 9th May, 1906, on the subject of a scheme formulated by the Royal College of Physicians for the creation of a special medical and sanitary organization for dealing with plague in selected localities. In the Civil and Military Station of Bangalore there is a special plague staff consisting of three military assistant surgeons and an adequate staff at a cost of about Rs. 2,300 per mensem. There is also a separate sanitary staff, maintained by the local municipality, consisting of a health officer (the present incumbent is an M.B., C.M. and D.P.H.) and qualified subordinates for attending to the general sanitary requirements of the station. The working of these two branches is co-ordinated and supervised by the Residency surgeon, who is an officer of the Indian Medical Service. The existing organization devotes attention to the three sections of work, viz., intelligence, sanitary, and bacteriological, recommended in paragraph 1 (*b*) of the letter under acknowledgment. The bacteriological work done is practically confined to the analysis of water and milk supplied to the station, specimens of blood sent from hospitals, and rats suspected of being plague-infected. Speaking generally, the ordinary

Sany./P. A., May 1906, Nos. 205–206.

superior medical staff of Bangalore, viz., the Residency surgeon, assisted by the municipal health officer and his subordinates, appears sufficient to deal with plague in its recent dimensions, which it is hoped will be still further reduced by the rat-killing measures now in operation. In these circumstances it appears to me that no need exists here for increasing the staff of officers belonging to the Indian Medical Service, or of specially importing physicians from England, and consequently the necessity for a scheme such as that formulated by the Royal College of Physicians, however desirable it may be for rural areas, is not felt in Bangalore.

Enclosure 13 in No. 2.

Letter from R. C. H. Moss King, Esq., I.C.S., Secretary to the Chief Commissioner of Coorg, to the Secretary to the Government of India, Home Department. No. 877, dated Bangalore, the 12th June, 1906.

(Extract).

I am directed to acknowledge the receipt of Mr. Fergusson's letter, No. 879, dated the 9th May, 1906, regarding a scheme formulated by the Royal College of Physicians for the creation of a special medical and sanitary organisation for dealing with plague in selected localities. The Province of Coorg was visited by plague only twice, namely, in the years 1903 and 1904, when there occurred 128 attacks and 57 deaths. The epidemic was then successfully dealt with by the Commissioner and Civil Surgeon, with the aid of the ordinary Municipal and Revenue officials, as detailed in the report submitted with my letter, No. 1,131, dated the 30th August, 1905. In view of the special circumstances of this isolated Province as stated in paragraph 2 of my letter cited above, it appears unnecessary to consider the necessity of providing any special medical and sanitary organisation such as is referred to in the letter under reply.

Enclosure 14 in No. 2.

Letter from The Honourable Lieutenant-Colonel Sir Harold Deane, K.C.S.I., Agent to the Governor-General and Chief Commissioner, North-West Frontier Province, to the Under Secretary to the Government of India, Home Department No. 1283-G., dated Nathia Gali, the 30th June 1906.

(Extract.)

I have the honour to acknowledge the receipt of your letter No. 881, dated 9th May 1906, in which an expression of my opinion is invited upon certain points raised in the despatch from the Secretary of State No. 138 (Revenue), dated 18th August, 1905, regarding the measures to be adopted for dealing with plague. Except for a few sporadic cases which have appeared from time to time, plague has never established itself in the North-West Frontier Province, either in an epidemic or endemic form. I have, therefore, no provincial experience to enable me to criticise the proposals put forward in your letter. At the same time in view of the possibility of a visitation of plague, a policy has been formulated, such as is suited to the peculiar conditions of the frontier and the character of its inhabitants. This policy is set forth in the memorandum attached to the letter No. 1856-G., dated 15th December, 1904, to the address of all Deputy Commissioners on the frontier. From this it will be seen that it has been thought advisable to abstain from all compulsion of any kind except (i) that all plague cases and deaths from plague must be reported, and (ii) that in municipal towns, strangers and friendless persons falling sick of plague in serais must be removed to public hospitals.

For the rest all measures of precaution, and measures of prevention, such as disinfection and the evacuation of villages, must be left to the discretion of the people themselves. On a late occasion when plague appeared in villages on the Hazara bank of the Indus, the Pathan villagers in Yusufzai at once refused to allow strangers in their villages, a practical step against introduction of plague into them. At the same time, should the people be wise enough to wish for help in such measures, the administration will have an agency ready to render the necessary assistance. Such being the policy adopted by this administration, it remains for me to offer an opinion as to the extent to which the proposals put forward in your letter would conduce to the successful working of this policy. As regards I (*a*) and (*b*)—I don't think that a special plague service, such as is proposed, would work well in this province. It is essential that the plague staff generally should consist of officers and subordinates acquainted with frontier conditions, who should be under the control of the Administrative Medical Officer of the North-West Frontier Province, who has the local expert knowledge necessary. On the frontier grave political considerations must necessarily be involved in dealing with a plague epidemic, and it is not desirable that a central plague department should have the control of the measures for dealing with it. For purposes of intelligence and sanitary work, should the people show themselves willing to adopt disinfection and similar measures, it would doubtless be necessary to increase the staff of officers and subordinates under the Administrative Medical Officer. But I am strongly of opinion that the general control should remain in the hands of the local administration. As regards the bacteriological work, I admit that the proper facilities for such work do not exist in this province, and that it would be well that bacteriological references from this province should be dealt with by a branch at headquarters, if such be established, or failing that by the officers of the Punjab entrusted with this work. As regards III (*b*), *viz.*, the proposal to utilise educated natives in a sanitary service for work in plague-infected areas, I do not think that there are many educated natives of sufficient social standing in this province who would readily join such a service. To import educated natives from other provinces for this work would be to court friction and to set the people against such sanitary measures, as they might be persuaded to adopt under more familar guidance. We must trust here to the spontaneous efforts of the leading men, who, for the most part, have the good sense to understand the advantages of sanitary measures. To attempt to enrol them in a sanitary service would be to deprive them of that spontaneity of action, which can alone guarantee whole-hearted work. As regards III (*c*), *viz.*, the proposal to grant scholarships to such natives of India as have the necessary medical training to enable them to proceed to England and fit themselves as plague health officers, I consider the suggestion sound although the cost involved would doubtless be considerable. It would undoubtedly be a great advantage to the Administrative Medical Officer of this province to have at his disposal in the event of an outbreak of plague a number of Assistant Surgeons, who had been specially trained as plague health officers. But the greatest care would be required in the selection of scholars, with a view to obtaining men not only of sufficient intellectual capacity but of good social standing and conspicuous respectability, who might be trusted when qualified to shun the malpractices which have made plague measures so bitterly unpopular in many parts of Northern India. In the case generally of this province the people who are not devoid of the instinct of self-preservation will, if left alone, certainly apply for assistance if they are threatened with an outbreak of plague. Such assistance, to be effectual, must be worked through the communities and leading men without the introduction of subordinate native officials. In the large city of Peshawar, where endeavours to induce the people to agree to a definite line of action failed, the few cases introduced from Rawalpindi were at once traced by the people of the city and removed by them to the hospital provided for plague patients—and a large number of people who fled from Rawalpindi to Peshawar to avoid the plague found local feeling so strong against their presence that they all returned to the Punjab.

Enclosure 15 in No. 2.

Letter from the Honourable Mr. A. L. P. Tucker, C. I. E., Officiating Agent to the Governor-General and Chief Commissioner in Baluchistan, to the Secretary to the Government of India, Home Department, No. 4288, *dated Quetta, the 25th September*, 1906.

With reference to the letter from the Government of India in the Home Department No. 882, dated the 9th May, 1906, regarding the creation of a special medical and sanitary organization for dealing with plague, I have the honour to say that Baluchistan has hitherto enjoyed immunity from plague and that I am not, in consequence, able to submit to the Government of India any views on the points under reference to which the weight of experience can be attached. In the event of the establishment of the disease in Baluchistan we should certainly require an organization for dealing with it such as that mentioned in clause 1, sections (*a*) and (*b*) of the letter to which I am replying. We could not, however, except in one or two localities, employ male and female native medical assistants other than Muhammadans. We could only in the same way use educated natives of India in a sanitary service for work in plague-infected areas if they were Muhammadans and were acquainted with the languages of the country: possibly at Quetta and at one or two other places an exception might be made. The grant of scholarships to qualified natives of India to enable them to proceed to England and fit themselves for ultimate employment as plague health officers in India is a measure which I support. No instructions explanatory of plague policy have been issued by myself or by my predecessors as there has been no occasion for them.

Enclosure No 16 in No. 2.

Letter from the Honourable Major H. Daly, C.S.I., C.I.E., Agent to the Governor-General in Central India, to the Secretary to the Government of India, Home Department, No. 3961-D, *dated the 26th December*, 1906.

(Extract).

I HAVE the honour to reply to your letter, No. 883, dated the 9th May, 1906, which forwarded for my information and for report upon certain points a copy of a despatch from the Secretary of State, 138 (Revenue), dated the 18th August, 1905, with enclosure, relating to plague. As regards the practicability of the scheme formulated by the Royal College of Physicians, it will, I think, be sufficient for me to observe that no such scheme could in present circumstances be conveniently introduced, at any rate in its entirety, in such an area as Central India. Speaking generally, the Durbars are without the staff which would be required for the initiation of such a scheme; their finances, with one or two exceptions, would not admit of the expenditure which the scheme would involve; and it would in any case be most undesirable for political reasons, to move the Durbars to undertake such expenditure unless and until the scheme has been given a successful trial in British India. Incidentally I may remark that it seems to me to be doubtful whether the institution of a highly trained Intelligence Branch is really necessary or desirable. It is probable that such a staff would not be in a position to obtain better information than the Magistrate or other local authority, while the class of subordinate at present employed upon inspection duty is probably just as likely to obtain information as to the course of an outbreak. A special sanitary staff, which could be employed to reinforce the existing staff at the scene of an outbreak, might no doubt prove valuable; but the charges for such a staff would in my opinion certainly have to be defrayed from Imperial revenues. As regards head III., I may observe (*a*) that the treatment of rats offers special difficulties in areas where the population are averse to the destruction of animal life in any circumstances. This has been well exemplified during the recent outbreak at Indore. In the Residency Bazaar and in the Indore City rewards were offered by the local authorities of one anna for a

dead rat and two annas for a live rat; as soon as this became known, the banias and others, many of whom are Jains, at once offered rewards of three annas for a live rat, and released all rats as soon as they were brought to them; (*b*) I have recently had the advantage of considering in communication with Colonel Leslie, the Sanitary Commissioner with the Government of India, who paid a visit to Indore at my request, the feasibility of introducing improved sanitary arrangements in the Indore Residency Bazaar, and I hope shortly to arrange for the employment of an expert to draw up a scheme. It is by no means improbable that the Indore Darbar, who also consulted Colonel Leslie during his recent visit, may take advantage of the visit of this expert to devise a similar scheme for the improvement of sanitation in the city. Should a practical scheme for the Residency Bazaars be produced, I propose to invite the Government of India to assist me by placing the necessary funds at my disposal. The employment of educated natives of India on sanitary service would be conveniently considered, so far as local needs are concerned, in connection with such a scheme. But here again little or nothing could be done without assistance from Imperial funds; (*c*) the suggestion to grant scholarships to natives of India, who have received the requisite medical training, in order to enable them to proceed to England for further study appears, if I may venture to say so, to go somewhat beyond the present needs of the case. A month or two of practical work in an infected area under the supervision of a good medical officer would, as it seems to me, be more likely to provide the practical training which is desirable than any course of study in Europe. Major J. R. Roberts, the Administrative Medical Officer in Central India, was consulted upon receipt of your letter and I now enclose a copy of his reply, together with a copy of the report* furnished by Captain J. B. Grant, the only other medical officer now serving in Central India who has had any extensive experience of plague. Captain Grant's remarks will be read with interest. The results of the campaign instituted in 1897 by Lieutenant-Colonel A. M. Crofts, then Medical Officer in Gwalior, in connection with the outbreak of plague at Khandraoni village in that State, are well known to the Government of India, as his report, dated the 8th May, 1897 was duly submitted to them at the time. I may mention here that the only Agency in Central India which (with the exception of the Datia State) had so far been practically free from plague is that of Bundelkhand. It may be of interest to mention that some four years ago several cases of plague occurred in a house in Tikamgarh, the capital of the Orchha State. The Maharaja, of his own motion, destroyed by fire the house in which the cases occurred, together with three or four other houses in the immediate neighbourhood, and the whole of their contents (paying liberal compensation). No further case of plague occurred, and Tikamgarh has since remained entirely free from the disease. Since Major Roberts wrote his letter of the 23rd July, there has been a further severe outbreak of plague at Indore, and the total number of seizures and deaths in Central India during the four months, August to November inclusive, were 11,761 and 8,889 respectively. This to some extent vitiates Major Roberts's hopeful statement that the epidemics are being held in check. Nevertheless the figures for 1906 are very considerably lower than those for 1903 and 1904. I append a chart† which indicates the seizures and deaths during the past four years. In connection with the low figures for 1905 it may be of interest to remark that in that year there was a severe and widespread epidemic of small-pox. The fact that plague has not spread more widely in Central India is, in my opinion, to be ascribed—*firstly*, to the circumstance that the people have now learnt by sad experience the wisdom of rapidly vacating infected areas; and, *secondly*, to the species of quarantine which is maintained by the Darbars. Their system is well understood and leads to no serious complaints. The general results of experience in Central India supports Captain Grant's view that disinfection alone is of little or no practical use. The difficulties in the way of thorough disinfection are enormous. I may mention that, when recently proceeding to Europe on leave, I had the advantage of travelling with Doctor W. J. R. Simpson, one of the Signatories of the Memorandum of

* I do not forward copies of the reports received from the other Agency Surgeons as they contain nothing helpful.

the Royal College of Physicians, whose acquaintance I had already enjoyed at Calcutta. I had some very interesting conversations on the subject of plague with Doctor Simpson, whose view is that the true remedy lies in endeavouring to improve the ordinary houses in cities and bazaars where plague generally takes a hold by giving them more ventilation and by admitting the sun to them. This is obviously a matter of the greatest difficulty, and it is a measure which could only be carried out very gradually and at great expense. Doctor Simpson kindly offered to endeavour to make practical suggestions on the point if I would supply him with plans and sketches of typical buildings in infected areas in Central India. I have accordingly sent Doctor Simpson some plans of typical buildings from the Indore Bazaar, and the investigations necessary for the preparation of these plans showed how crowded and insanitary the ordinary tenements are and how difficult it will be to improve them. One serious obstacle in the way of improvement is that, in many parts of Central India, the only form of roofing within the means of the poorer classes consists of the common curved country tiles, roofs formed of which give ready shelter to rats. The local clay is often not of a type to admit of the construction of the flat tiles in which rats could find no shelter. I have discussed the whole subject with His Highness the Maharaja Scindia, who, as the Government of India are aware, is deeply interested in sanitary improvements, and His Highness is also preparing for me some plans of typical buildings in Gwalior which I propose to forward to Doctor Simpson. At the Maharaja's request Colonel Leslie, Sanitary Commissioner, has just visited Gwalior. The Maharaja had heard with much interest of the measures, which are being taken elsewhere in the way of constructing model villages on sanitary lines. This is a measure to which attention might doubtless be very profitably devoted, and, in connection with the scheme for the improved sanitation of the Indore Residency Bazaar, I shall perhaps move the Government of India to place me in a position to make experiments in this direction also.

Annexure 1.

Letter from Major J. R. Roberts, M.B., I.M.S., Administrative Medical Officer in Central India, to the First Assistant to the Agent to the Governor-General in Central India, No. 650, *dated the* 23*rd July,* 1906.

I have the honour, in reply to your No. 1764–D/230–6 of 31st May, 1906, to forward reports on the Memorandum on Plague of the Royal College of Physicians, London, by the Agency Surgeons in Central India. I presume that it is unnecessary on my part to criticise the suggestions made in the memorandum as one has to consider not so much these points, as their applicability to the Central India States. I do not advise any further interference in the measures adopted by the various Darbars as the figures of plague for the last three years show that the epidemics are being held in check, and it would be an unnecessary counsel of perfection were we to suggest to the States a further increase in their endeavours. During 1903 there were registered 26,169 deaths from plague, in 1904 26,545, and in 1905, 2,855. The figures speak for themselves.

Annexure 2.

Letter from Captain J. B. Grant, I.M.S., Agency Surgeon in Bhopal, to the Administrative Medical Officer in Central India, No. 451, *dated 7th June,* 1906.

In compliance with your No. 481, of the 1st instant, asking for an early report on the proposals of the Royal College of Physicians for combating plague, I have the honour to reply as follows :—

I have had practical experience of plague, more or less for nine years, and as, with the exception of Lieutenant-Colonel Crofts, late Residency Surgeon in Gwalior, I was the first in India to deal successfully with an epidemic, I venture to say that I may speak with some authority.

Before criticising the proposals of the Royal College of Physicians, I shall relate my own experience and conclusions drawn therefrom, as well as from observing the measures adopted in dealing with plague epidemics elsewhere.

In 1897, I was sent to Sirohi in Rajputana, where plague had broken out in four villages, one of which had a population of about 10,000. All the villages were completely evacuated, and the disease was stamped out in about four months (for details see my report, printed with letter No. 2346–G., dated 23rd June, 1898, from the Agent to the Governor General in Rajputana).

When I went to Sirohi, plague had broken out in the Punjab, only two villages being then infected. Evacuation was *not* enforced there, but segregation of sick and contacts, with disinfection. Result—*Plague continuous since then, and spread all over the Punjab.* It has been suggested that the conditions in Rajputana were not favourable to the extension of plague : the history of the 1836 (Páli) epidemic fully disproves that.

Many Bombay Banias have their families in Rajputana, and when plague becomes severe in Bombay these leave for their homes, carrying infection with them. To combat that, quarantine (to give it its proper name) was established at railway stations, and all passengers from infected areas detained for ten days. During 1898 and 1899 these measures were strictly enforced, with the result that, although several died in the quarantine camps, not a single indigenous case of plague occurred in Rajputana. In 1900, the orders of the Government of India on the subject were so emphatic, that the Agent to the Governor-General could no longer retain the quarantine camps : *they were given up and plague came in.* I left Rajputana in 1900, and cannot say definitely what happened after, but the mortality from plague is still low in that province, and I understand that the Durbars now protect themselves by quarantine, using the euphemism "Observation Camps."

Briefly my experience is—

(1) To prevent plague ... ... Quarantine.
(2) After plague has occurred ... ... Evacuation.

I would now add to the above a third, namely, inoculation with plague prophylactic, which, in my opinion, has a marked protective power.

I have referred to the work of Lieutenant-Colonel Crofts, I.M.S., who was the first in India to deal successfully with an outbreak of plague. He *burnt* the villages, or the infected parts of them. I was present when he gave evidence before the Plague Commission. His measures were considered too drastic and expensive. Were they so ? Consider what he saved Gwalior, and what the Punjab would have been saved if similar measures had been adopted with the two villages infected in 1897 . . . . millions of men and money.

During the last few years, reams have been written about plague, and the suggestions for dealing with it are many. I say, without fear of contradiction, that no measures have had the slightest effect in preventing or modifying a plague epidemic than those enumerated, namely, (1) Quarantine ; (2) Evacuation of villages ; (3) Inoculation, and they are here given in the order of their value.

Much is said about sanitation, and as far as water-borne diseases are concerned, something has been done in India. But plague does not depend on the water-supply nor on the condition of the streets and lanes, but on the condition of the houses in which the people live. These are as they were in the time of Akbar. There was plague in his time, and it was combated by the people protecting themselves and not allowing outsiders to come in to their villages or districts. When their villages became infected, they fled from them, that is to say, the measures effective then were (1) Quarantine, (2) Evacuation.

Regarding the proposals of the Royal College of Physicians, they are excellent for a country advanced in modern civilization, but in India, for practical purposes, they are utterly and absolutely useless.

To review them briefly :—

SECTION A.

(1) "To obtain information as early as possible of cases of plague in human beings and in animals."

What can a special scientific staff do in collecting information, when well over 90 per cent. of the population of India do all they can to conceal cases of plague ? Regarding animals, if plague once gets in among rats, it goes on among them, and extends to human beings. Nothing can stop it. It is hard to see what use early information would be, except for early evacuation by human beings of that locality. But the natives of India will *not* evacuate early.

(2) "To inquire into and report on the circumstances under which every plague case has occurred and the method by which the house becomes infected or maintains its infection."

There is no doubt about the method by which plague first occurs. It is carried into a locality by human beings, either suffering from the disease, or with it in the incubation period. It is carried from house to house by rats.

(3) "To record information obtained."

The native of India has a genius for giving false information, and of what use can such be ?

SECTION B.

The duties of this section will be—

(1) "To disinfect the house or hut when death or recovery has taken place."

If the Royal College of Physicians had any experience of plague in India, they would know that it is most dangerous to the other members of the family to leave them in a house or hut till recovery has taken place, and a plague patient cannot be left alone. Besides that, once plague is established in a town or village, disinfection (without evacuation) is worse than useless, for it gives a false sense of security. Again and again have I seen plague recur in houses in Bombay which had been thoroughly disinfected. That was in 1897, before the *rôle* of the rat and his fleas was understood. The only circumstances in which disinfection is really of use is for imported cases *before rats have become infected.* During the last two years, at different times, about half-a-dozen cases of plague occurred in Sehore among arrivals from plague-infected areas. By good luck, we got to hear of them (not reported by parties concerned) and I think within three days of the

onset. In each case, all the inmates were sent to camp, the houses thoroughly disinfected. No dead rats were found. Had they not been disinfected, it is highly probable that some material would have been left behind from which rats would be infected. Had that been so, there would have been a general epidemic of plague in Sehore, as was the case three years ago.

(2) "To destroy rats generally by regular and systematic methods."

Excellent, but does it require experts in sanitary science to do that?

(3) "To carry out general administrative and prophylactic measures."

What can be done when 95 per cent. of the population live in huts with one-tenth to one-twentieth of the cubic space necessary, are filthy in their surroundings and habits? During the cold season every hole and crevice in their little huts is stuffed up.

SECTION C.

(1) "Diagnosis of doubtful cases."

I presume by this is meant diagnosis by microscopic examination. How often will a native of India allow a puncture? If he suspects plague he certainly will not.

(2) "Bacteriological examination of rats to see if 'plague infected.'"

It is useful to destroy rats before plague infected, as then there will be fewer carriers and disseminators of disease. But once rats become infected, it spreads to human beings, and there is only too little room for doubt about diagnosis. I fail to see what useful practical purpose this would serve.

(3) "Such bacteriological work as may be suggested from headquarters."

This is vague in the extreme.

The plague prophylactic is of value. It does not give protection universally. Still less will the population universally avail themselves of it. But by all means let bacteriologists work on these lines, with the object of discovering something still more useful.

I do not think it necessary to go further into detail. All that the sanitary service as proposed can do will be to give advice, which the Oriental will receive with his usual politeness, but will not act on it. India now has more expert advice than she makes use of. Not only medical officers, but all district officers; in fact, every intelligent European is capable of giving advice. But what use is it to advise a village to be cleaned when there is no conservancy establishment to carry it out, apart from the fact that the villager does not consider it of any good.

There are two ways by which plague may be dealt with successfully:—

(1) By modern methods:

For these to be of use, India will have to be made sanitary, which means that every town, village, and practically every house in the Empire has to be rebuilt. Even then, the natives of India will have to be educated up to *using*, and not *excluding* light and air. That will take time: how long I do not venture to predict, but I know that the East will not be hustled. Of course in all my remarks, I exclude Indians who are really *modern* European in their modes of living, but these form only a fractional percentage, which may be disregarded among 300 millions.

(2) India now being (with the exception of public thoroughfares, and in some few cases, of water supply) in the same sanitary condition as it was during the Moghal Emperors, employs the measures which were found effective in dealing with plague during that period.

Enclosure 17 in No. 2.

Letter from the Honourable Mr. E. G. Colvin, I.C.S., C.S.I., Agent to the Governor-General, Rajputana, and Chief Commissioner, Ajmer-Merwara, to H. H. Risley, Esq., I.C.S., C.S.I., Secretary to the Government of India, Home Department. No. 223, *dated Abu, the* 10*th July,* 1906.

(Extract).

I have the honour to acknowledge the receipt of letter, No. 884, dated the 9th May, 1906, from the Government of India in the Home Department, in which my opinion is invited on a scheme formulated by the Royal College of Physicians for the creation of a special medical and sanitary organization for dealing with plague in India. The Royal College of Physicians has perhaps not appreciated fully the special difficulties which are met with in India in dealing with an epidemic of this kind, arising not only from the apathy and inertia of the people themselves but from their active resentment against any interference with their domestic arrangements. The medical authorities in India have always been ready enough to conduct a campaign against plague, and they were at first strongly supported by the executive and by the Government of India. The result was concealment of cases, opposition, frequent riots of a very serious character and no real progress made against the epidemic. Eventually a policy of "laissez faire" and of leaving the people to learn by

experience was almost forced upon the Government of India, and it certainly seems to be quite as successful as the other treatment, for plague appears to be really on the decrease. My own experience is that people are learning that evacuation is the best remedy and I have heard now of several instances where whole vilages have adopted this plan of their own accord. There is reason to hope that it will soon become general, and control of the disease will then be greatly facilitated, as infection will be communicated by railway only, where fairly effective precautions can be and in fact are enforced. The connection of the disease with rat mortality is also gradually coming to be understood. So far as the scheme propounded by the Royal College of Physicians aims at a reversion to the old policy of interference with the prejudices of the people in the actual treatment of cases, I am not in favour of it. In other words Section B of the Medical Department proposed by them is not required. No real progress can be made against the disease without the support and co-operation of the people themselves, and where this is forthcoming, the existing medical establishments of the Government of India are ready and willing and adequate to perform the duty. The introduction of a number of physicians from England, unacquainted with the language, the customs and prejudices of the people, is likely to be productive of more harm than good. There might be also administrative difficulties in co-ordinating the proposed organisation with the existing medical administrative system of India. So far, however, as the scheme aims at the collection of more complete information and the bacteriological study of the disease, the assistance offered might be of the greatest benefit and should in my opinion be welcomed. For such purposes, and for the freer dissemination among their compatriots of more enlightened ideas on the subject of sanitary science and self protection, I see no objection to the proposals made in paragraph III (*b*) and (*c*) of the letter under reply. If, however, the facilities which exist in India for the bacteriological study of the disease are sufficient, it would be far better that the natives of India who are granted the scholarships should prosecute their studies in this country rather than proceed to England for the purpose.

Enclosure No. 18 in No. 2.

Letter from Sir Francis Younghusband, K.C.I.E., Resident in Kashmir, to the Secretary to the Government of India, Home Department, No. 5443, *dated the* 10*th*/16*th November*, 1906.

With reference to Home Department letter, No. 885, dated the 9th May, 1906, forwarding a copy of a despatch from the Secretary of State, No. 138 (Revenue), dated the 18th August, 1905 (and of its enclosure), I have the honour to forward, for the information of the Government of India, copies of the reports of Lieutenant-Colonel W. R. Edwards, M.D., C.M.G., I.M.S., Doctor A. Neve, Mission Hospital, Srinagar, and Dr. A. Mitra, Chief Medical Officer, Kashmir. The former officer has 20 years' service in India and the two latter have been engaged for over 20 years in medical work in Kashmir, so that the opinions of these officers are deserving of considerable attention.

Annexure 1.

Comments by Lieutenant-Colonel W. R. Edwards, M.D., C.M.G., I.M.S., on a scheme for the prevention of plague which has been submitted by the Royal College of Physicians.

I may begin by saying that I agree with the notes sent by Rai Bahadur Dr. A. Mitra.

For the following reasons I am totally averse to the scheme now submitted by the Royal College of Physicians—

1. It is an extremely expensive scheme.
2. It will fail for the same reason that our original efforts to deal with plague have failed.
3. It involves bringing out a number of men from England. Such importations have been tried and failed in the past and will fail again.
4. It proposes sending a number of natives of India to England for their education; this I consider for many reasons objectionable.

5. It suggests disinfection by fumigation. This by most men who have had real experience, will be considered utterly impracticable and a great waste of money.
6. It does not take the feelings of the people of India into consideration.
7. It does not aim sufficiently at the education of the people of India in simple hygienic requirements. For the rest, it appears to me that there is little in this scheme which is original, and that little is futile.

If a scheme is required, and I think one is, I recommend—

(i.) That a circular should be sent to all doctors in India, who have had practical and continuous experience in combating plague, asking each one to send up a complete scheme of his own.

(ii.) A committee of the most experienced men should be chosen to examine these schemes and to award prizes for the three best. I venture to say that most of the schemes thus received will be more practicable than the one now submitted.

(iii.) With these schemes before them, the committee should then draw up one, which before being submitted to the Government of India should be laid before the Congress of India. The Congress, as a body of men who are presumably devoted to the welfare of India and who are more intimately acquainted with the customs and prejudices of the people than we are, should be requested to express their opinion on the scheme before them.

If they approve of it, they should be asked to give their unreserved support, both practically and in writing. If not they should be asked to choose three of their number to consult with the above mentioned committee and to formulate a practical scheme which will be acceptable to the people of India.

I lay stress on this point, because I know that it is so absolutely essential for the success of any scheme that nothing should be left undone which may tend to remove the present hostile attitude of the people towards sanitary measures.

(iv.) The Government of India should spend money freely in improving the research laboratories already in India. For instance, those in Bombay, Calcutta, Kasauli and Lahore. One or two of these should be made into first-class institutions, and capable of granting a really valuable Diploma of Public Health. They should be sufficiently well endowed to earn a European reputation, and to attract some of the best European professors to their chairs.

(v.) Natives of India should be encouraged by the creation of well paid public health appointments to enter for the Indian D. P. H.

(vi.) Officers of the Indian Medical Service showing any aptitude for original research should receive every possible encouragement. The Government of India should be quick to recognise and reward good work. This alone would cause an immense change for the better. I see no reason why one or more prizes should not be offered yearly for the best original research work done, after the manner of the Nobel prize.

(vii.) Above all, knowledge must be diffused among the people. Not only the little knowledge we have of plague itself but more especially that of simple hygiene. To this end a prize should be offered for the best elementary book on hygiene, with special reference to plague and the infectious diseases. It must be suitable to the needs of people of India, and this book then should be used as a text-book in every school throughout India. The help of the Educational Department must be enlisted for this purpose.

(viii.) The extermination of rats is, I fear, a hopeless task. Private individuals might, however, with the help of poison, traps, and cats do much to assist, and might at least succeed in keeping rats out of their houses. Hindus being averse to taking life will probably prefer to make use of the cat or possibly the mongoose.

One thing I am certain of, and that is, that unless the people of India understand and approve of our aims it is not of the least use trying to force sanitary measures on them.

Annexure 2.

Letter from Dr. Arthur Neve, F.R.C.S.E., Kashmir Mission Hospital, to the Residency Surgeon in Kashmir, dated the 9th June. 1906.

With regard to the plague memorandum of the Royal College of Physicians. I cordially agree with your reply to the memorandum. I do not consider that it is desirable to give scholarships to Indians for study in England. Nor do I consider that a separate department for combating plague is necessary. Officers of the Indian Medical Service should be encouraged to take the D.P.H., and I think the suggestion of Dr. A. Mitra is good, that there should be a special college for sanitary education in India, at Bombay or elsewhere, to which Indian assistant surgeons might be sent for practical training.

I lay great stress on the personal influence of European medical officers in India, and consider that this is much hindered by :—

(1) The constant changes from place to place. In the Church Mission Society we practically spend our whole service in one district.

(2) The administrative work which takes up a large proportion of the time of all so that most civil surgeons see little of the outpatients, &c., too much is left to subordinates; there is not enough personal contact with the people, and at a time when a man has the ripest experience he is altogether withdrawn for higher administrative work, and has no professional opportunities. There are some noble exceptions.

Annexure 3.

Memorandum by Rai Bahadur Doctor A. Mitra, Chief Medical Officer, Kashmir, dated Srinagar, 5th June, 1906.

1. I think that any active policy in the matter of plague repression which involves interference with the people is bound to fail.

2. The most important help which the State can give is to encourage evacuation of houses by grant of money as compensation and affording every facilities for temporary houses.

3. Disinfection of houses is a very difficult thing to do. Disinfection by chemicals and taking such measures as will expose all parts of a house to the desiccating influence of sun and air are perhaps all that can be done practically. But the result is always doubtful.

4. Extermination of rats is still more difficult.

5. In my opinion the duty of the State is not so much to combat plague when it is actually raging as to take measures which may prove of great use hereafter. These measures are chiefly to improve the dwelling houses of the people, specially of the poor. Such duties devolved principally on municipalities and district boards which should be helped by the State with grant-in-aid—

(1) Providing poor lodging houses based on sanitary principles.
(2) Framing and enforcing sanitary building regulations.
(3) If necessary giving money grant for improvement of existing houses. In my opinion the key to the solution of the plague problem is in the sanitary improvement of towns and villages.

6. It will be an undoubted advantage to train Indian Medical men in modern practical hygiene, and facilities for such study should be afforded in all medical colleges and schools. There should be special classes in them for bacteriology, practical hygiene, &c., under expert teachers, if necessary, brought from England. The universities in India should examine for and give the diploma of D.P.H., which should be made compulsory in case of all assistant surgeons, seeking Government employment. The money spent on the organization of thoroughly equipped D.P.H. classes in medical colleges India will be far more usefully spent in that way than by giving scholarships to I for study of sanitary sciences in England. Such scholarships will be but few. T any practical good a good sound knowledge of hygiene should be disseminated practitioners throughout the country.

It is admitted that the general practitioners in England have done m sound sanitary principles amongst the people than expert laboratory trained These D.P.H. diplomas should be opened to general practitioners. All lar and groups of small municipalities should appoint these Indian D.P. This will form a nucleus of a future sanitary service in India.

Sanitation for India can surely be learnt in India if proper Sound training in bacteriology by expert teachers in well-equipped adapted for teaching purposes is much required.

7. The Royal College divides the works into three sections. The and B can, I think, be best done by one set of medical officers. The confusion.

Section C or bacteriologists may work in laboratories at the Pr medical colleges exist.

8. The Civil Surgeon of a district with one or more Indians as I have described above, can do all the duties mentioned i Royal College of Physicians' memorandum.

Enclosure 19 in No. 2.

Letter from Major C. H. Pritchard, I.A., Officiatin Under Secretary to the Government of India, H Plague, No. 7677, dated Baroda, the 25th M

I have the honour to reply to your letter No. regarding special plague measures recommend Physicians in England.

2. The scheme described in I (*a*) and (medical and sanitary organization for dealin is, undoubtedly, most excellent, and it juncture an organization of the kind is a

3. The key-note of the working of all the three sections mentioned in (*b*) should, I think, be to work with the full knowledge of, and, in full sympathy with, and through the natives themselves.

In any locality selected for the operations of the organization, before anything is done, a committee, composed of one influential, and, if possible, educated, member of *each* caste in the locality, should be formed, and nothing at all should be done without the knowledge of this native committee, and measures should be carried out through the native committee.

4. Everything should be done to assuage native prejudice, and to induce the natives themselves to understand the why and the wherefore and the value of all measures proposed. Money should be provided liberally, so that no native shall be put to any loss by measures enforced. Liberality in affording compensation immediately to any who suffer pecuniary loss by plague measures, is most imperatively necessary, if plague measures are to be successful.

The natives should be induced to undertake all measures themselves through the influence of their better educated and wiser caste people, and no plague measures should ever be attempted "by order."

5. The tendency of the Oriental to see some ulterior and malign motive in the most benignly intended action of executive authority, should always be borne in mind by those charged with directing plague measures.

6. The proposals made in III (*b*) and (*c*) of your letter under reply are admirable. It is by educating the natives of India to understand and to value hygiene and sanitation, and to carry out the necessary hygienic and sanitary measures themselves, that it may be possible to effectually combat plague in India.

No. 3.

...ch from the Secretary of State for India to His ...llency the Right Honourable the Governor-General ...a in Council, No. 118 (Revenue), dated the 26th July

...sidered in Council the letter of Your Excellency's Govern... ...nitary), dated the 2nd May, 1907, in which you reply to ... ...spatch of the 18th August, 1905, transmitting a "Memo... ...," presented to him by the Royal College of Physicians in

...dum, after dwelling on the grave dangers arising from an ...de and duration of the plague in India, offered sugges... ...tive prevention of the disease. It laid stress on the ...y service of India as at present organised, and recom... ...pecial sanitary service for the purpose of dealing with ... that a special service should be formed, con... ...des of officers of the Indian Medical Service and ... this country, and in the lower grades of natives of ...d into an Intelligence Branch, an Administrative ...earch Branch, and that its operations should be ...ue Department at headquarters. Among the ...n the Memorandum drew special attention were ... disinfection of houses by means of a fumigatory

...rding the Memorandum to Lord Curzon's ...heir views, stated that the deputation had ... for a systematic examination of rats in

Digitized with financial assistance from

Government of Maharashtra

on 01 February, 2020